

5/14/2028

WO 97/32980

1/90

PCT/CA97/00163

42628

APPROVED BY BRAFTSMAN	O.G. FIG. CLASS SU
-----------------------------	-----------------------

AMINO ACID SEQUENCES OF A CONSERVED PORTION OF
Tbp1 PROTEIN FOR CONSTRUCTION OF DEGENERATE
PRIMERS USED IN PCR AMPLIFICATION OF A PORTION
OF THE *M. cattarhalis* 4223 *tbpA* GENE.

N E V T G L G

SEQ ID NO: 17

G A I N E I E

SEQ ID NO: 18

FIG.1

BEST AVAILABLE COPY

660750-22927100

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

09/142628

M. catarrhalis 4223 Transferrin Receptor Genes

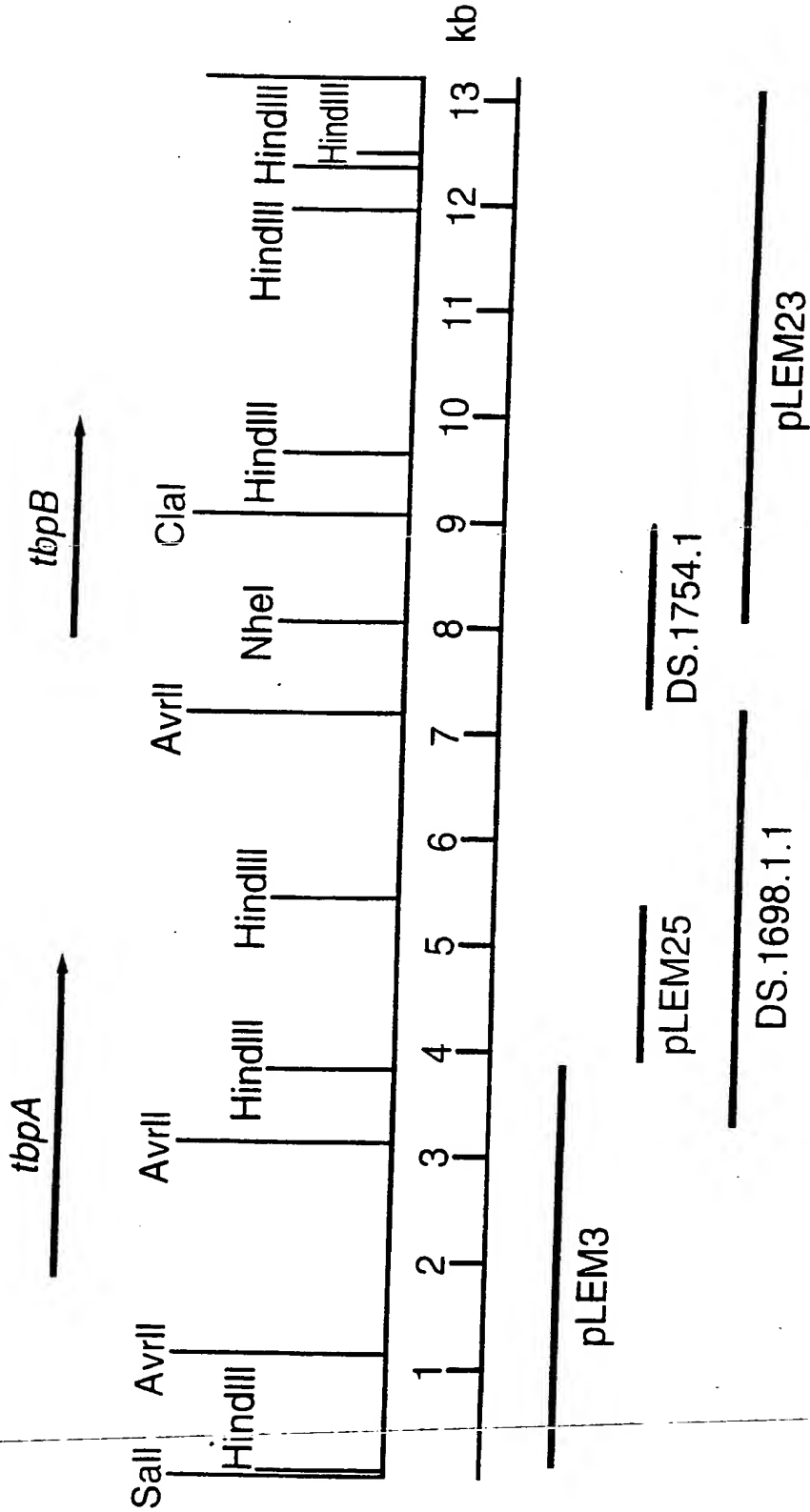


FIG.2

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

600T-30-32980

M. catarrhalis 4223 *tbpA* gene

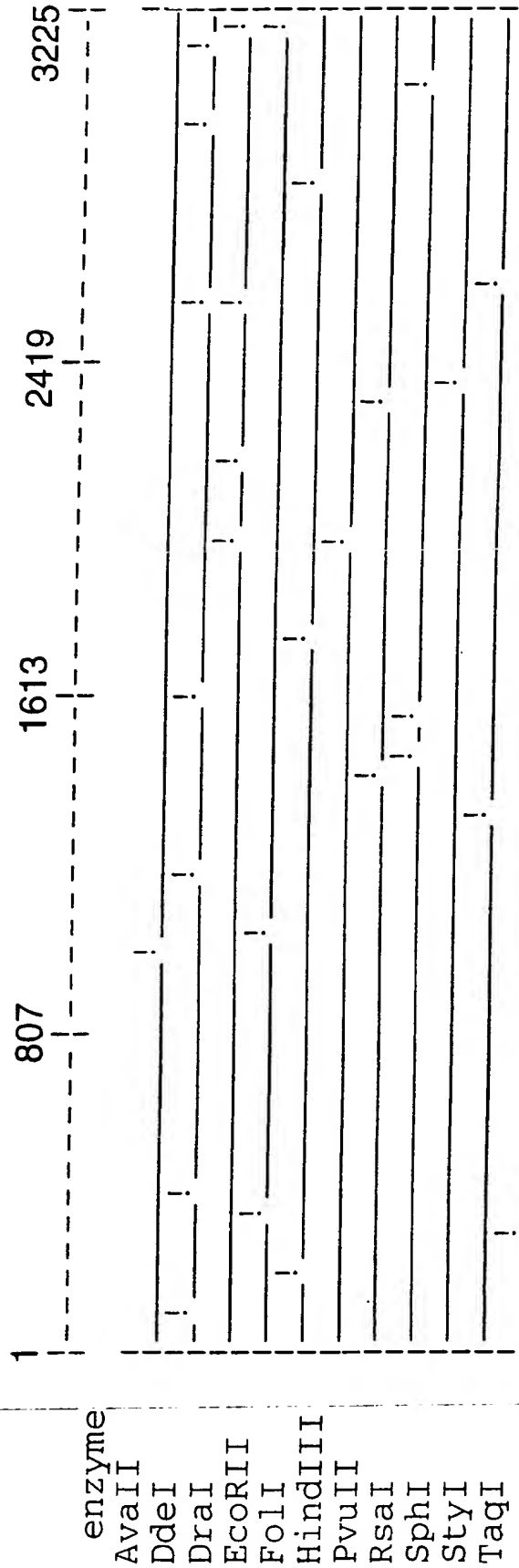


FIG.3

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

6507.90-82924T60

M. catarrhalis 4223 *tbpB* gene

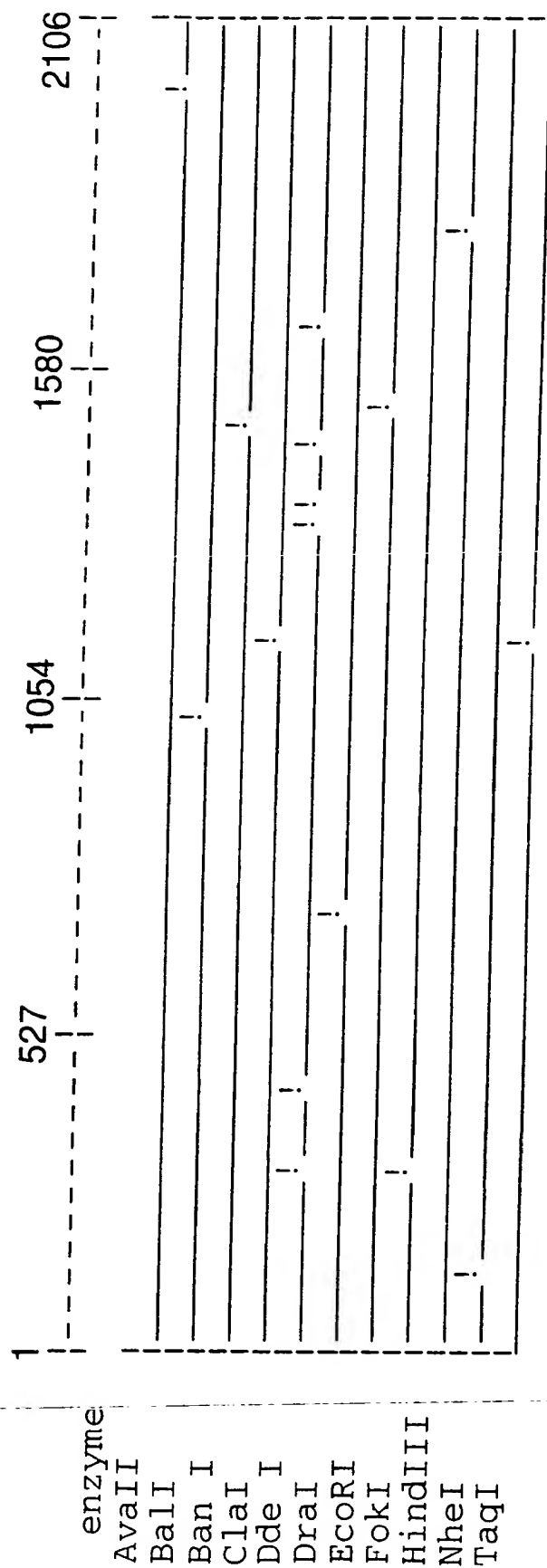


FIG.4

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

FIG.5A

Sequence of *M. catarrhalis* 4223 *tbpA* gene

TATTTTGACAAGCTATACACTAAATCAAAAATTAATCACTTTGGTTGGTGGTTTAGCAAGCAAAATGGT
TATTTTGGTAAACAATTAAAGTTCCTTAAACGATACACGCTCATAAACAGATGGTTTTTGGCATCTGCAAT
TTGATGCCCTGCCCTTGATTTGGTTGGGTGATCGGTGATCAAAAGTGCAAAAGCCAACAGGTGGTCATTG
ATG AAT CAA TCA AAA CAA AAC AAC AAA TCC AAA AAA CAA GTA TTA AAA 54
MET Asn Gln Ser Lys Lys Gln Asn Lys Ser Lys Ser Lys Gln Val Leu Lys
CTT AGT GCC TTG TCT TTG GGT CTG CTT AAC ATC ACG CAG GTG GCA CTG GCA AAC 108
Leu Ser Ala Leu Ser Leu Gly Leu Leu Asn Ile Thr Gln Val Ala Leu Ala Asn
ACA ACG GCC GAT AAG GCG GAG GCA ACA GAT AAG ACA AAC AAC CTT GTT GTT GTC TTG 162
Thr Thr Ala Asp Lys Lys Ala Glu Ala Thr Asp Lys Thr Asn Leu Val Val Leu
GAT GAA ACT GTT GTA ACA GCG AAG AAA AAC GCC CGT AAA GCC AAC GAA GTT ACA 216
Asp Glu Thr Val Val Thr Ala Lys Lys Asn Ala Arg Lys Ala Asn Glu Val Thr

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

650130-82924160

FIG.5B

GGG CTT	GGT AAG GTG GTC AAA ACT GCC	GAG ACC ATC AAT AAA GAA CAA GTG	270 CTA
Gly Leu	Gly Lys Val Val Lys Thr Ala	Glu Thr Ile Asn Lys Glu Gln Val Leu	
AAC ATT	CGA GAC TTA ACA CGC TAT GAC	CCT GGC ATT GCT GTG GTT GAG CAA	324 GGT
Asn Ile	Arg Asp Leu Thr Arg Tyr Asp	Pro Gly Ile Ala Val Val Glu Gln Gly	
CGT GGG	GCA AGC TCA GGC TAT TCT ATT	CGT GGT ATG GAT AAA AAT CCG GTG	378 GCG
Arg Gly	Ala Ser Ala Ser Gly Tyr Ser Ile	Arg Gly MET Asp Lys Asn Arg Val Ala	
GTA TTG	GTT GAT GGC ATC AAT CAA GCC	CAC TAT GCC CTA CAA GGC CCT	432 GTG
Val Leu	Val Asp Val Ile Asn Gln Ala	Tyr His Gln Tyr Ala Leu Gln Pro Val	
GCA GGC	AAA AAT TAT GCC GCA GGT GGG	AAC ATC GAA ATA GAA TAC GAA	486 AAT
Ala Gly	Lys Asn Tyr Ala Ala Gly Gly	Asn Ile Asn Glu Ile Glu Tyr Glu Asn	
GTC CGC	TCC GTT GAG ATT AGT AAA GGT	TCA AGT GAA TAC GGC TCT	540 GGG
Val Arg	Ser Val Glu Ile Ser Lys Gly	Tyr Glu Tyr Gly Ser Gly	

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

FIG.5C

WO 97/32980

7/90

09/142628

PCT/CA97/00163

GCA TTA	TCT	GGC	TCT	GTG	GCA	TTT	GTT	ACC	AAA	ACC	GCC	GAT	GAC	ATC	ATC	AAA	594
Ala	Leu	Ser	Gly	Ser	Val	Ala	Phe	Val	Thr	Lys	Thr	Ala	Asp	Ile	Ile	Lys	
GAT GGT	AAA	GAT	TGG	GGC	GTG	CAG	ACC	AAA	ACC	GCC	TAT	GCC	AGT	AAA	AAT	AAC	648
Asp	Gly	Lys	Asp	Trp	Gly	Val	Gln	Thr	Lys	Thr	Ala	Tyr	Ala	Ser	Lys	Asn	
GCA TGG	GTT	AAT	TCT	GTG	GCA	GCA	GCA	GGC	AAG	GCA	GGT	TCT	TTT	AGC	GGT	CTT	702
Ala	Trp	Val	Asn	Ser	Val	Ala	Ala	Ala	Gly	Lys	Ala	Gly	Ser	Phe	Ser	Gly	
ATC ATC	TAC	ACC	GAC	CGC	CGT	GGT	CAA	GAA	TAC	AAG	GCA	CAT	GAT	GAT	GCC	TAT	756
Ile	Ile	Tyr	Thr	Asp	Arg	Arg	Gly	Gln	Glu	Tyr	Lys	Ala	His	Asp	Asp	Ala	
CAG GGT	AGC	CAA	AGT	TTT	GAT	AGA	GCG	GTG	GCA	ACC	ACT	GAC	CCA	AAT	AAC	CGA	810
Gln	Gly	Ser	Gln	Ser	Phe	Asp	Arg	Ala	Val	Ala	Thr	Thr	Asp	Pro	Asn	Arg	
ACA TTT	TTA	ATA	GCA	AAT	GAA	TGT	GCC	AAT	GGT	AAT	TAT	GAG	GCG	TGT	GCT	GCT	864
Thr	Phe	Leu	Ile	Ala	Asn	Glu	Cys	Ala	Asn	Gly	Asn	Tyr	Glu	Ala	Cys	Ala	
GGC GGT	CAA	ACC	AAA	CTT	CAA	GCC	AAG	CCA	ACC	AAT	GTG	CGT	GAT	AAG	GTC	AAT	918
Gly	Gly	Gln	Thr	Lys	Leu	Gln	Ala	Lys	Pro	Thr	Asn	Val	Arg	Asp	Lys	Val	

09/142628

APPROVED BY	O.G. FIG.
DRAFTSMAN	CLASS SUBCLASS

600730-8292760

FIG.5D

GTC Val	AAA Lys	GAT Asp	TAT Tyr	ACA Thr	GGT Gly	CCT Pro	AAC Asn	CGC Arg	CTT Leu	ATC Ile	CCA Pro	AAC Asn	CCA Pro	CTC Leu	ACC Thr	CAA Gln	GAC Asp	972
AGC Ser	AAA Lys	TCC Ser	TTA Leu	CTG Leu	CTT Leu	CGC Arg	CCA Pro	GGT Gly	TAT Tyr	CAG Gln	CTA Leu	AAC Asn	GAT Asp	AAG Lys	CAC His	TAT Tyr	GTC Val	1026
GGT Gly	GGT Gly	GTG Val	TAT Tyr	GAA Glu	ATC Ile	ACC Thr	AAA Lys	CAA Gln	AAC Asn	TAC Tyr	GCC Ala	ATG MET	CAA Gln	GAT Asp	AAA Lys	ACC Thr	GTG Val	1080
CCT Pro	GCT Ala	TAT Tyr	CTG Leu	ACG Thr	GTT Val	CAT His	GAC Asp	ATT Ile	GAA Glu	AAA Lys	TCA Ser	AGG Arg	CTC Leu	AGC Ser	AAC Asn	CAT His	GCC Ala	1134
CAA Gln	GCC Ala	AAT Asn	GGC Gly	TAT Tyr	TAT Tyr	CAA Gln	GGC Gly	AAT Asn	AAT Asn	CTT Leu	GGT Gly	GAA Glu	CGC Arg	ATT Ile	CGT Arg	GAT Asp	ACC Thr	1188
ATT Ile	GGG Gly	CCA Pro	GAT Asp	TCA Ser	GGT Gly	TAT Tyr	GGC Gly	ATC Ile	AAC Asn	TAT Tyr	GCT Ala	CAT His	GGC Gly	GTA Val	TTT Phe	TAT Tyr	GAT Asp	1242

550150-32980

APPROVED	O.G.FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

FIG.5E

GAA AAA Glu Lys	CAC CAA His Gln	AAA GAC Lys Asp	CGC CTA Arg Leu	GGG CTT Gly Gly	TAT GAA Tyr Glu	GTT TAT Val Tyr	GAC GAC Asp Ser	AGC AAA Ser Lys	GGT Gly	1296
GAA AAT Glu Asn	AAA TGG Lys Trp	TTT GAT Phe Asp	GAT GAT Val Arg	GTG CGT Val Ser	TCT TAT Ser Tyr	GAT GAT Asp Ile	CAA CAA Lys Gln	GAC ATT Asp Thr	ACG Thr	1350
CTA CGC Leu Arg	AGC CAG Ser Gln	CTG ACC Leu Thr	AAC ACG Asn Thr	CAC TGT His Cys	TCA ACC Ser Thr	TAT CCG Tyr Pro	CAC ATT His Ile	GAC AAA Asp Lys	AAA Thr	1404
AAT TGT Asn Cys	ACG CCT Thr Pro	GAT GTC Asp Val	AAT AAT Asn Lys	CCT AAA Pro Phe	TCG GTA Ser Val	GAG AAA Lys Glu	GAT AAC Val Asp	AAT Asn	Asn Asn	1458
GCC TAC Ala Tyr	AAA GAA Lys Glu	CAG CAC Gln His	AAT ATC Asn Leu	ATC AAA Ile Lys	GCC GTC Ala Val	TTT AAC Phe Asn	AAA Lys Lys MET	ATG GCG Ala		1512
TTG GGC Leu Gly	AGT ACG Ser Thr	CAT CAT His His	CAC ATC His Ile	AAC CTG Asn Leu	CAA GTT Gln Val	GGC TAT Gly Tyr	AAA Lys Asp Phe	TTC AAT Asn		1566
TCA AGC Ser Ser	CTG AGC Leu Ser	CGT GAA Arg Glu	GAT TAT Asp Tyr	CGT Arg	TTG GCA Leu Ala	CAT His	TCT Ser	TAT Tyr	CAA Gln	1620

SUBSTITUTE SHEET (RULE 26)

CTT GAT Leu Asp	TAC Tyr	ACC Thr	CCA Pro	CCA Pro	AGT Ser	AAC Asn	CCT Pro	TTG Leu	CCA Pro	GAT Asp	AAG Lys	TTT Phe	AAG Lys	CCC Pro	ATT Ile	TTA Leu	1674
GGT TCA Gly Ser	AAC Asn	AAC Asn	AAA Lys	CCC Pro	ATT Ile	TGC Cys	CTT Leu	GAT Asp	GCT Ala	TAT Tyr	GGT Gly	TAT Tyr	GGT Gly	CAT His	GAC Asp	CAT His	1728
CCA CAG Pro Gln	GCT Ala	TGT Cys	AAC Asn	GCC Ala	AAA Lys	AAC Asn	AGC Ser	ACT Thr	TAT Tyr	CAA Gln	AAT Asn	TTT Phe	GCC Ala	ATC Ile	AAA Lys	AAA Lys	1782
GGC ATA Gly Ile	GAG Glu	CAA Gln	TAC Tyr	AAC Asn	CAA Gln	AAA Lys	ACC Thr	AAT Asn	ACC Thr	GAT Asp	AAG Lys	ATT Ile	GAT Asp	TAT Tyr	CAA Gln	GCC Ala	1836
ATC ATT Ile Ile	GAC Asp	CAA Gln	TAT Tyr	GAT Asp	AAA Lys	CAA Gln	Asn Asn	CCC Pro	AAC Asn	AGC Ser	ACC Thr	CTA Leu	AAA Lys	CCC Pro	TTT Phe	GAG Glu	1890
AAA ATC Lys Ile	AAA Lys	CAA Gln	AGT Ser	TTG Leu	GGG Gly	CAA Gln	GAA Glu	AAA Lys	TAC Tyr	AAC Asn	AAG Lys	ATA Ile	GAC Asp	GAA Glu	CTT Leu	GGC Gly	1944

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

660F90" 82924160

FIG.5G

TTT AAA GCT TAT AAA GAT TTA CGC AAC	GAA TGG GCG GGT TGG ACT AAT GAC AAC	1998
Phe Lys Ala Tyr Lys Asp Leu Arg Asn Glu Trp Ala Gly Trp Thr Asn Asp Asn		
AGC CAA CAA AAT GCC AAT AAA GGC ACG	GAT AAT ATC TAT CAG CCA AAT CAA GCA	2052
Ser Gln Gln Asn Ala Asn Lys Gly Thr	Asn Ile Tyr Gln Pro Asn Gln Ala	
ACT GTG GTC AAA GAT GAC AAA TGT AAA	TAT AGC GAG ACC AAC AGC TAT GCT GAT	2106
Thr Val Val Lys Asp Asp Lys Cys Lys	Tyr Ser Glu Thr Asn Ser Tyr Ala Asp	
TGC TCA ACC ACT CGC CAC ATC ATC AGT GGT	GAT AAT TAT TTC ATC GCT TTA AAA GAC	2160
Cys Ser Thr Thr Arg His Ile Ser Gly	Asp Asn Tyr Phe Ile Ala Leu Lys Asp	
AAC ATC ACC ATC AAT AAA TAT GTT GAT	TTG GGG CTG GGT GCT CGC TAT GAC AGA	2214
Asn MET Thr Ile Asn Lys Tyr Val Asp	Leu Gly Leu Gly Ala Arg Tyr Asp Arg	
ATC AAA CAC AAA TCT GAT GTG CCT TTG	GTA GAC AAC AGT GCC AGC AAC CAG CTG	2268
Ile Lys His Lys Ser Asp Val Pro Leu	Val Asp Asn Ser Ala Ser Asn Gln Leu	

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

FIG.5H

WO 97/32980

12/90

09/142628

PCT/CA97/00163

TCT TGG	AAT TTT	GGC GTG	GTC GTC	AAG CCC	ACC AAT	TGG CTG	GAC ATC	GCT TAT	2322
Ser Trp	Asn Phe	Gly Val	Val Val	Lys Val	Thr Asn	Trp Leu	Asp Ile	Ala Tyr	
AGA AGC	TCG CAA	GGC TTT	CGC ATG	CCA AGT	TTT TCT	GAA ATG	TAT GGC	GAA CGC	2376
Arg Ser	Ser Gln	Gly Phe	Arg MET	Pro Ser	Phe Ser	Glu MET	Tyr Gly	Glu Arg	
TTT GGC	GTA ACC	ATC GGT	AAA GGC	ACG CAA	CAT GGC	TGT AAG	GGT CTT	TAT TAC	2430
Phe Gly	Val Thr	Ile Gly	Lys Lys	Thr Thr	Gln His	Cys Lys	Gly Leu	Tyr Tyr	
ATT TGT	CAG CAG	ACT GTC	CAT CAT	ACC CAA	CTA AAA	CCT GAA	AAA TCC	TTT AAC	2484
Ile Cys	Gln Gln	Thr Val	His His	Thr Thr	Lys Leu	Pro Glu	Lys Ser	Phe Asn	
CAA GAA	ATC GGA	GCG ACT	TTA CAT	AAC CAC	TTA GGC	AGT AGT	GAG GGT	AGT TAT	2538
Gln Glu	Ile Gly	Ala Thr	Leu Leu	His Asn	Gly Leu	Ser Ser	Glu Val	Ser Tyr	
TTT AAA	AAT CGC	TAT ACC	GAT TTT	ATT GTT	GGT AAA	AGT AGT	GAG GAA	ATT AGA	2592
Phe Lys	Asn Arg	Tyr Thr	Asp Leu	Ile Ile	Gly Val	Ser Ser	Glu Glu	Ile Arg	Thr
CTA ACC	CAA GGT	GAT AAT	GCA GGC	AAA CAG	CGT GGT	AAA GGT	GAT TTT	GGC TTT	2646
Leu Thr	Gln Gly	Asp Asp	Ala Gly	Lys Lys	Arg Gly	Lys Gly	Asp Leu	Gly Phe	

項目	2000年	2001年	2002年	2003年	2004年	2005年	2006年	2007年	2008年	2009年	2010年	2011年	2012年	2013年	2014年	2015年	2016年	2017年	2018年	2019年	2020年	2021年	2022年	2023年	2024年	2025年	2026年	2027年	2028年	2029年	2030年	2031年	2032年	2033年	2034年	2035年	2036年	2037年	2038年	2039年	2040年	2041年	2042年	2043年	2044年	2045年	2046年	2047年	2048年	2049年	2050年	2051年	2052年	2053年	2054年	2055年	2056年	2057年	2058年	2059年	2060年	2061年	2062年	2063年	2064年	2065年	2066年	2067年	2068年	2069年	2070年	2071年	2072年	2073年	2074年	2075年	2076年	2077年	2078年	2079年	2080年	2081年	2082年	2083年	2084年	2085年	2086年	2087年	2088年	2089年	2090年	2091年	2092年	2093年	2094年	2095年	2096年	2097年	2098年	2099年	2100年																																																																												
人口	12,000	12,500	13,000	13,500	14,000	14,500	15,000	15,500	16,000	16,500	17,000	17,500	18,000	18,500	19,000	19,500	20,000	20,500	21,000	21,500	22,000	22,500	23,000	23,500	24,000	24,500	25,000	25,500	26,000	26,500	27,000	27,500	28,000	28,500	29,000	29,500	30,000	30,500	31,000	31,500	32,000	32,500	33,000	33,500	34,000	34,500	35,000	35,500	36,000	36,500	37,000	37,500	38,000	38,500	39,000	39,500	40,000	40,500	41,000	41,500	42,000	42,500	43,000	43,500	44,000	44,500	45,000	45,500	46,000	46,500	47,000	47,500	48,000	48,500	49,000	49,500	50,000	50,500	51,000	51,500	52,000	52,500	53,000	53,500	54,000	54,500	55,000	55,500	56,000	56,500	57,000	57,500	58,000	58,500	59,000	59,500	60,000	60,500	61,000	61,500	62,000	62,500	63,000	63,500	64,000	64,500	65,000	65,500	66,000	66,500	67,000	67,500	68,000	68,500	69,000	69,500	70,000	70,500	71,000	71,500	72,000	72,500	73,000	73,500	74,000	74,500	75,000	75,500	76,000	76,500	77,000	77,500	78,000	78,500	79,000	79,500	80,000	80,500	81,000	81,500	82,000	82,500	83,000	83,500	84,000	84,500	85,000	85,500	86,000	86,500	87,000	87,500	88,000	88,500	89,000	89,500	90,000	90,500	91,000	91,500	92,000	92,500	93,000	93,500	94,000	94,500	95,000	95,500	96,000	96,500	97,000	97,500	98,000	98,500	99,000	99,500	100,000

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
	DRAFTSMAN	

FIG. 51

CAT AAT His Asn	GGA Gly	CAA Gln	GAT Asp	GCT Ala	GAT Asp	TTG Leu	ACA Thr	GGC Gly	ATT Ile	AAC Asn	ATT Ile	CTT Leu	GGC Gly	AGA Arg	CTT Leu	GAC Asp	2700
CTA AAC Leu Asn	GCT Ala	GTC Val	AAT Asn	AGT Ser	CGC Arg	CTT Leu	CCC Pro	TAT Tyr	GGA Gly	TTA Leu	TAC Tyr	TCA Ser	ACA Thr	CTG Leu	GCT Ala	TAT Tyr	2754
AAC AAA Asn Lys	GTT Val	GAT Asp	GTT Val	AAA Lys	GGA Gly	AAA Lys	ACC Thr	TTA Leu	AAC Asn	CCA Pro	ACT Thr	TTG Leu	GCA Ala	GGA Gly	ACA Thr	AAC Asn	2808
ATA CTG Ile Leu	TTT Phe	GAT Asp	GCC Ala	ATC Ile	CAG Gln	CCA Pro	TCT Ser	CGT Arg	TAT Tyr	GTG Val	GTG Val	GGG Gly	CTT Leu	GGC Gly	TAT Tyr	GAT Asp	2862
GCC CCA Ala Pro	AGC Ser	CAA Gln	AAA Lys	TGG Trp	GGA Gly	GCA Ala	AAC Asn	GCC Ala	ATA Ile	TTT Phe	ACC Thr	CAT His	TCT Ser	GAT Asp	GCC Ala	AAA Lys	2916
AAT CCA Asn Pro	AGC Ser	GAG Glu	CTT Leu	TTG Leu	GCA Ala	GAT Asp	AAG Lys	AAC Asn	TTA Leu	GGT Gly	AAT Asn	GGC Gly	AAC Asn	ATT Ile	CAA Gln	ACA Thr	2970

14/90

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

FIG.5J

2997
 AAA CAA GCC ACC AAA GCA AAA TCC ACG CCG TGG CAA ACA CTT GAT TTG TCA GGT
 Lys Gln Ala Thr Lys Ala Lys Ser Thr Pro Trp Gln Thr Leu Asp Leu Ser Gly

3051
 TAT GTA AAC ATA AAA GAT AAT TTT ACC TTG CGT GCT GGC GCA GGT GTA TTT
 Tyr Val Asn Ile Lys Asp Asn Phe Thr Leu Arg Ala Gly Val Tyr Asn Val Phe

3105
 AAT ACC TAT TAC ACC ACT TGG GAG GCT TTA CGC CAA ACA GCA GAA GGG GCG GTC
 Asn Thr Tyr Tyr Thr Thr Trp Glu Ala Leu Arg Gln Thr Ala Glu Gly Ala Val

3159
 AAT CAG CAT ACA GGA CTG AGC CAA GAT AAG CAT TAT GGT CGC TAT GCC GCT CCT
 Asn Gln His Thr Gly Leu Ser Gln Asp Lys His Tyr Gly Arg Tyr Ala Ala Pro

3213
 GGA CGC AAT TAC CAA TTG GCA CTT GAA ATG AAG TTT TAA
 Gly Arg Asn Tyr Gln Leu Ala Leu Glu MET Lys Phe

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

FIG.6A

Sequence of *M. catarrhalis* 4223 *tbpB* gene

GTAAATTGCGGTATTTGTGCTATCATAAATGCATTATCAAAATGCTCAAAATAAATACGCCAAATGCACAT

TGTCAGCATGCCAAATAGGCATCAACAGACTTTTTTTTAGATAAATACCATCAACCCATCAGAGGATTATTTT

27 54

ATG AAA CAC ATT CCT TTA ACC ACA CTG TGT GTG GCA ATC TCT GCC GTC TTA TTA

MET Lys His Ile Pro Leu Thr Thr Leu Cys Val Ala Ile Ser Ala Val Leu Leu

81 108

ACC GCT TGT GGT GGC AGT GGT GGT TCA AAT CCA CCT GCT CCT ACG CCC ATT CCA

Thr Ala Cys Gly Gly Ser Gly Gly Ser Asn Pro Pro Ala Pro Thr Pro Ile Pro

135 162

AAT GCT AGC GGT TCA GGT AAT ACT GGT AAC ACT GGT AAT GCT GGC GGT ACT GAT

Asn Ala Ser Gly Ser Gly Asn Thr Gly Asn Thr Gly Asn Ala Gly Gly Thr Asp

189 216

AAT ACA GCC AAT GCA GGT AAT ACA GGC GGT ACA AAC TCT GGT ACA GGC AGT GCC

Asn Thr Ala Asn Ala Gly Asn Thr Gly Gly Thr Asn Ser Gly Thr Gly Ser Ala

243 270

AAC ACA CCA GAG CCA AAA TAT CAA GAT GTA CCA ACT GAG AAA AAT GAA AAA GAT

Asn Thr Pro Glu Pro Lys Tyr Gln Asp Val Pro Thr Thr Glu Lys Asn Glu Lys Asp

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
CRAFTSMAN		

650750-32980

FIG.6B

AAA GTT	TCA	TCC	ATT	CAA	GAA	CCT	GCC	ATG	GGT	TAT	GGC	ATG	GCT	TTG	AGT	AAA	324
Lys Val	Ser	Ser	Ile	Gln	Glu	Pro	Ala	MET	Gly	Tyr	Gly	MET	Ala	Leu	Ser	Lys	
ATT AAT	CTA	CAC	AAC	CGA	CAA	GAC	ACG	CCA	TTA	GAT	GAA	AAA	AAT	ATC	ATT	ACC	378
Ile Asn	Leu	His	Asn	Arg	Gln	Asp	Thr	Pro	Leu	Asp	Glu	Lys	Asn	Ile	Ile	Thr	
TTA GAC	GGT	AAA	AAA	CAA	GTT	GCA	GAA	GGT	AAA	AAA	TCG	CCA	TTG	CCA	TTT	TCG	432
Leu Asp	Gly	Lys	Lys	Gln	Val	Ala	Glu	Gly	Lys	Lys	Ser	Pro	Leu	Pro	Phe	Ser	
TTA GAT	GTA	GAA	AAT	AAA	TTG	CTT	GAT	GGC	TAT	ATA	GCA	AAA	ATG	AAT	GTA	GCG	486
Leu Asp	Val	Glu	Asn	Lys	Leu	Leu	Asp	Gly	Tyr	Ile	Ala	Lys	MET	Asn	Val	Ala	
GAT AAA	AAT	GCC	ATT	GGT	GAC	AGA	ATT	AAG	AAA	GGT	AAT	AAA	GAA	ATC	TCC	GAT	540
Asp Lys	Asn	Ala	Ile	Gly	Asp	Arg	Ile	Lys	Lys	Gly	Asn	Lys	Glu	Ile	Ser	Asp	
GAA GAA	CTT	GCC	AAA	CAA	ATC	AAA	GAA	GCT	GTG	CGT	AAA	AGC	CAT	GAG	TTT	CAG	594
Glu Glu	Leu	Ala	Lys	Gln	Ile	Lys	Glu	Ala	Val	Arg	Lys	Ser	His	Glu	Phe	Gln	

FIG.6C

CAA Gln	GTA Val	TTA Leu	TCA Ser	TCA Ser	CTG Leu	GAA Glu	AAC Asn	AAA Lys	ATT Ile	TTT Phe	CAT His	TCA Ser	AAT Asn	GAC Asp	GGA Gly	ACA Thr	ACC Thr	648
AAA Lys	GCA Ala	ACC Thr	ACA Thr	CGA Arg	GAT Asp	TTA Leu	AAA Lys	TAT Tyr	GTT Val	GAT Asp	TAT Tyr	GGT Gly	TAC Tyr	TAC Tyr	TTG Leu	GCG Ala	AAT Asn	702
GAT Asp	GGC Gly	AAT Asn	TAT Tyr	CTA Leu	ACC Thr	GTC Val	AAA Lys	ACA Thr	GAC Asp	AAA Lys	CTT Leu	TGG Trp	AAT Asn	TTA Leu	GGC Gly	CCT Pro	GTG Val	756
GGT Gly	GGT Gly	GTG Val	TTT Phe	TAT Tyr	AAT Asn	GGC Gly	ACA Thr	ACG Thr	ACC Thr	GCC Ala	AAA Lys	GAG Glu	TTG Leu	CCC Pro	ACA Thr	CAA Gln	GAT Asp	810
GCG Ala	GTC Val	AAA Lys	TAT Tyr	AAA Lys	GGA Gly	CAT His	TGG Trp	GAC Asp	TTT Phe	ATG Thr	ACC Thr	GAT Val	GTT Ala	GCC Asn	AAC Arg	AGA Arg	AGA Arg	864
AAC Asn	CGA Arg	TTT Phe	AGC Ser	GAA Glu	GTG Val	AAA Lys	GAA Glu	AAC Asn	TCT Ser	CAA Gln	GCA Ala	GGC Gly	TGG Trp	TAT Tyr	TAT Tyr	GGA Gly	GCA Ala	918

APPROVED.	O.G. FIG.
BY	CLASS
DRAFTSMAN	SUBCLASS

600790-32980

09/142628

FIG.6D

TCT Ser	TCA AAA Lys	GAT Asp	GAA Glu	TAC Tyr	AAC Asn	CGC Arg	TTA Leu	ACT Thr	AAA Lys	GAA Glu	GAC Asp	TCT Ser	GCC Ala	CCT Pro	GAT Asp	972
GGT Gly	CAT His	AGC Ser	GGT Gly	GAA Glu	TAT Tyr	GGC Gly	CAT His	AGC Ser	AGT Ser	GAG Thr	ACT Thr	TTT Phe	AAT Val	TTT Phe	AAG Lys	1026
AAA Lys	AAA Lys	TTA Leu	ACA Thr	GGT Gly	AAG Lys	CTG Leu	TTT Phe	AGT Ser	AAC Asn	CTA Leu	CAA Gln	GAC Asp	CGC Arg	CAT His	AAG Lys	1080
GTT Val	ACA Thr	AAA Lys	ACC Thr	GAA Glu	CGC Arg	TAT Tyr	GAC Ile	GAT Asp	GCC Ala	AAT Asn	ATC Ile	CAC His	GGC Gly	Asn Arg	Phe Phe	1134
CGT Arg	GGC Ser	AGT Ser	GCC Ala	ACC Thr	GCA Ala	AGC Ser	AAT Asn	AAA Lys	AAT Asn	ACA Thr	AGC Ser	AAA Lys	CAC His	CCC Pro	TTT Phe	1188
AGT Ser	GAT Ala	AAC Asn	AAT Asn	AGG Arg	CTA Leu	GAA Glu	GGT Gly	GGT Gly	TTT Phe	TAT Tyr	GGG Gly	CCA Pro	AAA Lys	GGC Gly	GAG Glu	1242

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

NO. 50-222760

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

FIG.6E

CTG GCA	GGT AAA	TTC Phe	TTA Leu	ACC Thr	AAT Asn	GAC Asp	AAC Lys	AAA Leu	CTC Phe	TTT Gly	GTC Val	TTT Phe	1296
Leu Ala	Gly Lys	Lys Phe	Leu Phe	Thr Asn	Asp Lys								GCT Ala
AAA CGA	GAG AGT	AAA GCT	GAG AAA	GAG GAA	AAA ACC	GAA ATC	TTC GAT	TTA GCC	ATC TTA	GAT TTA	GAT TTA	GCC TAT	1350
Lys Arg	Glu Ser	Lys Lys	Ala Lys	Glu Lys	Thr Lys	Ala Ile	Leu Asp	Ala Tyr					Ala
CTT GGC	ACA TTT	AAT Phe	ACA Thr	AGT Ser	AAC Asn	GCA Ala	ACC Thr	ACA Thr	TTC Phe	ACC Thr	TTT Phe	ACC Thr	1404
Leu Gly	Thr Thr	Phe Asn	Thr Asn	Ala Thr	Ala Thr								Lys
CAA CTG	GAT AAC	TTT GGC	AAT GGC	AAA AAT	AAA AAA	TTG TTA	GGT TCT	ACC ACC	TTA TCT	ACC TCT	ACC TCT	GTC ATT	1458
Gln Leu	Asp Asp	Phe Gly	Asn Ala	Lys Ala	Lys Lys	Val Leu	Gly Ser	Thr Val	Ile Ile				
GAT TTG	GTG CCT	ACT ACT	GAT GCC	ACC ACC	AAA AAT	GAA TTC	ACC ACC	AAA Lys	Asp Lys	Pro Glu			1512
Asp Leu	Val Val	Pro Thr	Thr Asp	Ala Thr	Lys Thr	Glu Asn	Phe Thr						
TCT GCC	ACA AAC	GAA GCG	GAG GGC	ACT GAG	ACT TTG	ATG GAT	GAA GAT	GTT AGC	GTC GTC				1566
Ser Ala	Thr Thr	Asn Glu	Ala Glu	Gly Thr	Leu Thr	<u>MET Val</u>	<u>Asn Asp</u>	<u>Glu Val</u>	<u>Ser Val</u>				

FIG.6F

AAA ACC	TAT	GGC	AAA	AAC	TTT	GAA	TAC	CTA	AAA	TTT	GGT	GAG	CTT	AGT	ATC	GGT	1620
Lys Thr	Tyr	Gly	Lys	Asn	Phe	Glu	Tyr	Leu	Lys	Phe	Gly	Glu	Leu	Ser	Ile	Gly	
GGT AGC	CAT	AGC	GTC	TTT	TTA	CAA	GGC	GAA	CGC	ACC	GCT	ACC	ACA	GGC	GAG	AAA	1674
Gly Ser	His	Ser	Val	Phe	Leu	Gln	Gly	Glu	Arg	Thr	Ala	Thr	Thr	Gly	Glu	Lys	
GCC GTA	CCA	ACC	ACA	GGC	ACA	GCC	AAA	TAT	TTG	GGG	AAC	TGG	GTA	GGA	TAC	ATC	1728
Ala Val	Pro	Thr	Thr	Gly	Thr	Ala	Lys	Tyr	Leu	Gly	Asn	Trp	Val	Gly	Tyr	Ile	
ACA GGA	AAG	GAC	ACA	GGA	ACG	GGC	ACA	GGA	AAA	AGC	TTT	ACC	GAT	GCC	CAA	GAT	1782
Thr Gly	Lys	Asp	Thr	Gly	Thr	Gly	Thr	Gly	Lys	Ser	Phe	Thr	Asp	Ala	Gln	Asp	
GTT GCT	GAT	TTT	GAC	ATT	GAT	TTT	GGA	AAT	AAA	TCA	GTC	AGC	GGT	AAA	CTT	ATC	1836
Val Ala	Asp	Phe	Asp	Ile	Asp	Phe	Gly	Asn	Lys	Ser	Val	Ser	Gly	Lys	Leu	Ile	
ACC AAA	GGC	CGC	CAA	GAC	CCT	GTA	TTT	AGC	ATC	ACA	GGT	CAA	ATC	GCA	GGC	AAT	1890
Thr Lys	Gly	Arg	Gln	Asp	Pro	Val	Phe	Ser	Ile	Thr	Gly	Gln	Ile	Ala	Gly	Asn	

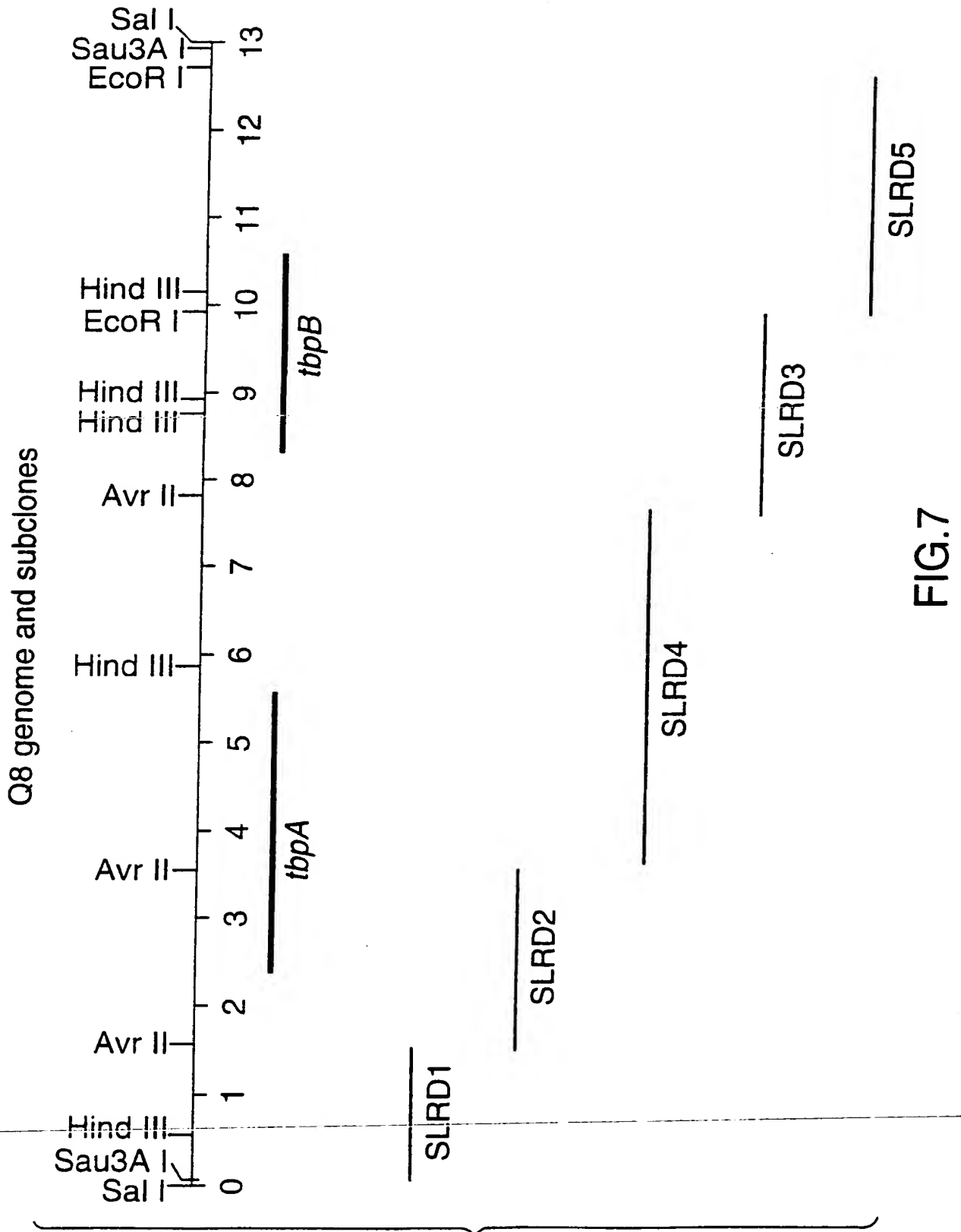
APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

FIG.6G

GGC TGG	ACA GGG ACA GCC AGC ACC ACC	AAA GCG GAC GCA GGA GGC TAC	1944	AAG ATA
Gly Trp	Thr Gly Thr Ala Ser Thr Thr	Lys Ala Asp Ala Gly Gly Tyr		Lys Ile
GAT TCT	AGC AGT ACA GCC AAA TCC ATC	GCC ATC AAA GAT GCC AAT GTT	1998	ACA GGG
Asp Ser	Ser Ser Thr Thr Gly Lys Ser Ile	Ala Ile Lys Asp Ala Asn Val Thr		Gly
GGC TTT	TAT GGT CCA AAT GCA AAC GAG	ATG GGC GGG TCA TTT ACA CAC	2052	AAC GCC
Gly Phe	Tyr Gly Pro Asn Ala Asn Glu	MET Gly Gly Ser Phe Thr His		Asn Ala
GAT GAC	AGC AAA GCC TCT GTG GTC TTT	GGC ACA AAA AGA CAA CAA	2106	GTT AAG
Asp Asp	Ser Lys Ala Ser Val Val Phe	Gly Thr Lys Arg Gln Gln Glu		Val Lys

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		



APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

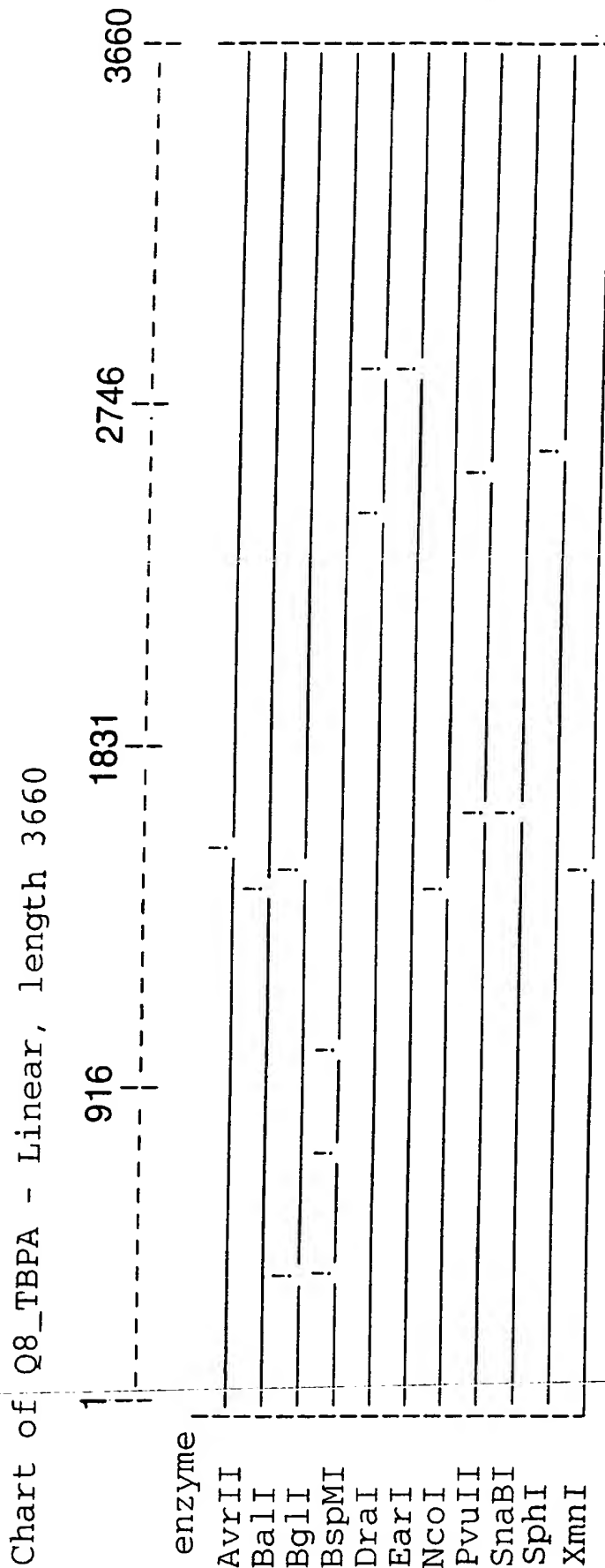


FIG.8

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

660790-82924760

Chart of Q8_TBPB_SLRD3_SLRD5 - Linear, length 3487

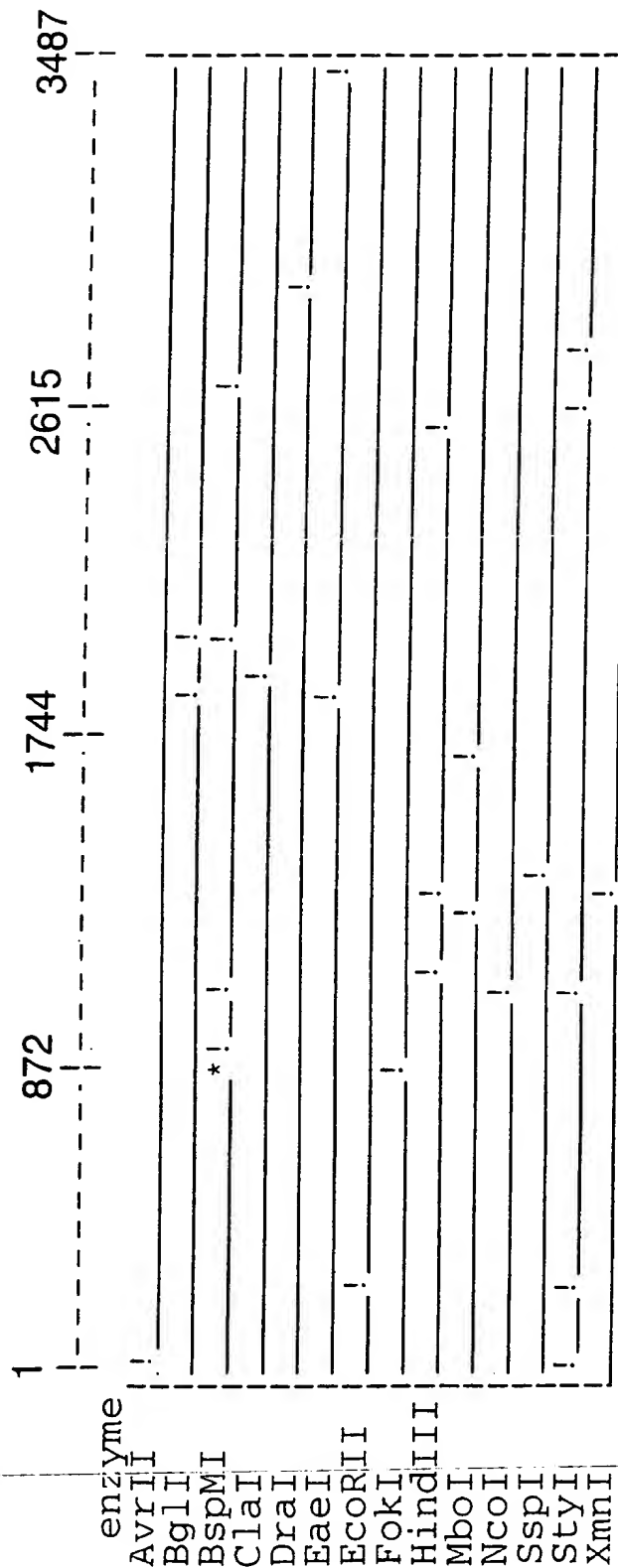


FIG.9

[illegible]

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

FIG. 10A

Q8 tbpA gene sequence

A A T G A T A C A A A T G G T T G T A T T A T C A C T
 10 20 30
 T G T A T T G T A T T A A T T T A C T T A T T T T
 40 50 60

ACAAAC TATACACTAAATCAAAATTAAT
70 80 90
CACTTGGTTGGTGGTTTAGCAAGCAAA
100 110 120

TGGTTATTTTGGTAAACAATTAAAGTTCTTA
130 140 150
AAACGATACACGCTCATAAACAGATGGTT
160 170 180

TTGGCA TCTTCAATTGATGCCCTTG 200
210
TGATTGGTTGGGGGTGTA TTGATGTATCCA 220
230
240

AGTACA AAGCCAACAGGTGGTCA TTGATG
250 260 270
MET

APPROVED	06.FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

FIG.10B

WO 97/32980

26/90

09/142628

PCT/CA97/00163

ASN GLN SER LYS LYS SER LYS SER LYS
AATCAATCCAAATAATCCAAATCCAA
280 290 300

GLN VAL LEU LYS LEU SER ALA LEU SER LEU
CAAGTATTAAACTTAGTGCCCTTGCTTG
310 320 330

GLY LEU LEU ASN ILE THR GLN VAL ALA LEU
GGCTGCTTAACATCACGCAGGTGGCACTG
340 350 360

ALA ASN THR THR ALA ASP LYS ALA GLU ALA
GCAACACACGGCCGATAGGCGGAGGCA
370 380 390

THR ASP LYS THR ASN LEU VAL VAL VAL LEU
ACAGATAAGACACAACCTTGTTGTCTCTG
400 410 420

ASP GLU THR VAL VAL THR ALA LYS ASN
GATGAACCTGTGTACAGCGAAGAAAC
430 440 450

ALA ARG LYS ALA ASN GLU VAL THR GLY LEU
GCCCGTAAGCCCAACGAAGTTACAGGGCTT
460 470 480

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

600500-32980

FIG.10C

```

GLY  LYS  VAL  LYS  THR  ALA  GLU  THR  ILE
GGTAAGGTGGTCAAAACTGCCGAGACCATC
490
ASN  LYS  GLU  VAL  LEU  ASN  ILE  ARG  ASP
AATAAGAACAGTGCTAAACATTTCGAGAC
520
LEU  THR  ARG  TYR  ASP  PRO  GLY  ILE  ALA  VAL
TTAACACGCTATGACCCCTGGCATTTGCTGTG
550
VAL  GLU  GLN  GLY  ARG  GLY  ALA  SER  SER  GLY
GTGAGCAAGGTCGTGGGCAAGCTCAGGC
580
TYR  SER  ILE  ARG  GLY  MET  ASP  LYS  ASN  ARG
TATTCATAATCGTGGTATGGATAAATCGT
610
VAL  ALA  VAL  LEU  VAL  ASP  GLY  ILE  ASN  GLN
GTGGCGGTATTGGTTGATGGCATCAATCAA
640
ALA  GLN  HIS  TYR  ALA  LEU  GLN  PRO  VAL
GCCAGCACTATGCCCTACAAGGCCCTGTG
670

```

APPROVED	O.G.FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

660790-8294760

FIG.10D

WO 97/32980

28/90

09/142628

PCT/CA97/00163

ILE ASN	GLU	ILE	GLU	TYR	GLU	ASN	VAL	ARG	ALA	GLY	LYS	ASN	TYR	ALA	ALA	GLY	GLY	ALA	
A T C A A C	G A A A	T A G A	A T A C	G A A A	T G T C	C G C			G C A G	G C A A	A A A T	T A T G	C C G C	A G G T	G G G C	A			720
																			700
																			710
																			720
																			730
																			740
																			750
																			760
																			770
																			780
																			790
																			800
																			810
																			820
																			830
																			840
																			850
																			860
																			870
																			880
																			890
																			900

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

500130-32980

FIG.10E

```

ASN  ASN  ALA  TRP  VAL  ASN  SER  VAL  ALA  ALA
AATAACGCATGGGTTAATTCTGTGGCAGCA
910
ALA  GLY  LYS  ALA  GLY  SER  PHE  SER  GLY  LEU
GCAGGCAAGGCAGGTCTTTTAGCGGCTCT
940
950
960

ILE  ILE  TYR  THR  ASP  ARG  ARG  GLY  GLN  GLU
ATCATCTACCCGACCGCGTGGTCAAGAA
970
980
990
TYR  LYS  ALA  HIS  ASP  ASP  ALA  TYR  GLN  GLY
TACAAGGCACATGATGATGCCCTATCAGGGT
1000
1010
1020

SER  GLN  SER  PHE  ASP  ARG  ALA  VAL  ALA  THR
AGCCAAAGTTTGTATAGAGCGGTGGCAACC
1030
1040
1050
THR  ASP  PRO  ASN  ASN  PRO  LYS  PHE  LEU  ILE
ACTGACCCAAATAACCCAAATAATTTTATAATA
1060
1070
1080

ALA  ASN  GLU  CYS  ALA  ASN  GLY  ASN  TYR  GLU
GCAATAATGATGTCCTCAATGGTAATTATGAG
1090
1100
1110

```

APPROVED	0:G.FID.
BY	CLASS SUBCLASS
DRAFTSMAN	

FIG.10F

WO 97/32980

30/90

09/142628

PCT/CA97/00163

ALA CYS ALA ALA GLY GLY THR LYS LEU
GCGTGCTGCTGCGGTCAACCAACTC
1120 1130 1140

GLN ALA LYS PRO THR ASN VAL ARG ASP LYS
CAGCTAAGCCCAACCAATGTGCTGATAAG
1150 1160 1170

VAL ASN VAL LYS ASP TYR THR GLY PRO ASN
GTCAATGTCAAGATTATACAGGTCCTAAC
1180 1190 1200

ARG LEU ILE PRO ASN PRO LEU THR GIN ASP
CGCCTTATCCCAACCCACTCACCCAGAC
1210 1220 1230

SER LYS SER LEU LEU ARG PRO GLY TYR
AGCAATCCCTTACTGCTTCGCCCAAGTTAT
1240 1250 1260

GLN LEU ASN ASP LYS HIS TYR VAL GLY GLY
CAGCTAACGATAAGCACTATGTCGGTGGT
1270 1280 1290

VAL TYR GLU ILE THR LYS GIN ASN TYR ALA
GTGTATGAATAACCAACAACACTACGCC
1300 1310 1320

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

660150" 8234160

FIG.10G

MET	GLN	ASP	LYS	THR	VAL	PRO	ALA	TYR	LEU	
A	T	G	C	A	A	G	A	A	C	C
G	T	G	C	C	T	G	C	C	T	T
A	T	C	T	T	A	T	C	T	G	
										1330
										1340
										1350
										1360
										1370
										1380
										1390
										1400
										1410
										1420
										1430
										1440
										1450
										1460
										1470
										1480
										1490
										1500
										1510
										1520
										1530
										1540
										1550
										1560
										1570
										1580
										1590
										1600
										1610
										1620
										1630
										1640
										1650
										1660
										1670
										1680
										1690
										1700
										1710
										1720
										1730
										1740
										1750
										1760
										1770
										1780
										1790
										1800
										1810
										1820
										1830
										1840
										1850
										1860
										1870
										1880
										1890
										1900
										1910
										1920
										1930
										1940
										1950
										1960
										1970
										1980
										1990
										2000

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

6001500-82524150

FIG.10H

GLU TYR VAL TYR ASP SER LYS GLY GLU ASN
G A A T A T G T T T A T G A C A G C A A A G G T G A A A T
1540 1550 1560

LYS TRP PHE ASP ASP VAL ARG VAL SER TYR
A A A T G G T T T G A T G A T G T G C G T G T G T C T T A T
1570 1580 1590

ASP LYS GLN ASP ILE THR LEU ARG SER GLN
G A C A A G C A A G A C A T T A C G C T A C G T A G C C A G
1600 1610 1620

LEU THR ASN THR HIS CYS SER THR TYR PRO
C T G A C C A A C A C G C A C T G T T C A A C C T A T C C G
1630 1640 1650

HIS ILE ASP LYS ASN CYS THR PRO ASP VAL
C A C A T T G A C A A A A A T T G T A C G C C T G A T G T C
1660 1670 1680

ASN LYS PRO PHE SER VAL LYS GLU VAL ASP
A A T A A A C C T T T T C G G T A A A G A G G T G G A T
1690 1700 1710

ASN ASN ALA TYR LYS GLU GLN HIS ASN LEU
A A C A A T G C C C T A C A A G A A C A G C A C A A T T T A
1720 1730 1740

/142628

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

660490-8294460

FIG.10I

```

ILE LYS ALA VAL PHE ASN LYS LYS MET ALA
ATCAAAGCCGTCCTTAACAATAATGGCA
1750 1760 1770
LEU GLY ASN THR HIS HIS ILE ASN LEU
TTGGCAATACGCATCATCATCATCTG
1780 1790 1800

GLN VAL GLY TYR ASP LYS PHE ASN SER SER
CAGTTGGCTATGATAATAATTCAATCAGC
1810 1820 1830
LEU SER ARG GLU ASP TYR ARG LEU ALA THR
CTTAGCCGTGAAGATTATCGTTTGGCAACC
1840 1850 1860

HIS GLN SER TYR GLN LYS LEU ASP TYR THR
CATCAATCTTATCAAAACTTGATTACACC
1870 1880 1890
PRO PRO SER ASN PRO LEU PRO ASP LYS PHE
CCACCAAGTAACCCCTTGGCCAGATAGTTT
1900 1910 1920

LYS PRO ILE LEU GLY SER ASN ARG PRO
AGCCCATTTTAGGTTCAAACAACAGACCC
1930 1940 1950

```

APPROVED	O.G.FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

SEQUENCE

FIG.10J

```

      ILE CYS LEU ASP ALA TYR GLY TYR GLY HIS
      A T T G C C T T G A T G C T T A T G G T T A T G G T C A T
      1960                                1970                                1980

ASP HIS PRO GLN ALA CYS ASN ALA LYS ASN
G A C C A T C C A C A G G C T T G T A A C G C C A A A A C
      1990                                2000                                2010

      SER THR TYR GLN ASN PHE ALA ILE LYS LYS
      A G C A C T T A T C A A A A C T T T G C C A T C A A A A A
      2020                                2030                                2040

GLY ILE GLU GLN TYR ASN GLN THR ASN THR
G G C A T A G A G C A A T A C A A C C A A T A C C
      2050                                2060                                2070

      ASP LYS ILE ASP TYR GLN ALA VAL ILE ASP
      G A T A A G A T T G A T T A T C A A G C C G T C A T T G A C
      2080                                2090                                2100

GLN TYR ASP LYS GLN ASN PRO ASN SER THR
C A A T A T G A T A A C A A A A C C C C A A C A G C A C C
      2110                                2120                                2130

      LEU LYS PRO PHE GLU LYS ILE LYS GLN SER
      C T A A A C C C C T T T G A G A A A A T C A A C A A A G T
      2140                                2150                                2160

```

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
CRAFTSMAN		

[illegible]

FIG. 10K

LEU GLY	GLN GLU	LYS TYR	ASP GLU	ILE ASP	
TTGGGG	CAAGAA	ATAACG	ACGATAGAC		
2170	2180	2190			
	ARG LEU	GLY PHE	ASN ALA	TYR LYS	ASP LEU
	AGACTGGG	CTTTAATG	CTTATAA	AGATTTA	2220
	2200	2210			
ARG ASN	GLU TRP	ALA GLY	TRP THR	ASN ASP	
CGCAAC	GATGGCGGG	TGGACTAATGAC			
2230	2240	2250			
	ASN SER	GLN GLN	ASN ALA	ASN LYS	GLY THR
	AACAGCC	AACAACA	CGCCATAA	AGGCACG	2280
	2260	2270			
ASP ASN	ILE TYR	GLN PRO	ASN GLN	ALA THR	
GATAAT	ATCTATCAG	CCAAATCAGCAACT			
2290	2300	2310			
	VAL VAL	LYS ASP	ASP LYS	CYS LYS	TYR SER
	GTGGTCA	AAGATGAC	AAATGTA	ATAATAGC	2340
	2320	2330			
GLU THR	ASN SER	TYR ALA	ASP CYS	SER THR	
GAGACC	AACAGCTATG	CTGATTGCTCAACC			
2350	2360	2370			

APPROVED	O.G.FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

SEQUENCE

FIG.10L

THR ARG HIS ILE SER GLY ASP ASN TYR PHE
A C T C G C C A C A T C A G C G G T G A T A T T A T T C
2380 2390 2400

ILE ALA LEU LYS ASP ASN MET THR ILE ASN
A T C G C T T A A A G A C A C A T G A C C A T C A A T
2410 2420

LYS TYR VAL ASP LEU GLY LEU GLY ALA ARG
A A A T A T G T T G A T T T G G G G C T G G G T G C T C G C
2440 2450 2460

TYR ASP ARG ILE LYS HIS LYS SER ASP VAL
T A T G A C A G A A T C A A C A C A A A T C T G A T G T G
2470 2480 2490

PRO LEU VAL ASP ASN SER ALA SER ASN GLN
C C T T T G G T A G A C A C A C A G T G C C A G C A C C A G
2500 2510 2520

LEU SER TRP ASN PHE GLY VAL VAL LYS
C T G T C T T G G A A T T T T G G C G T G G T C G T C A G
2530 2540 2550

PRO THR ASN TRP LEU ASP ILE ALA TYR ARG
C C C A C C A A T T G G C T G G A C A T C G C T T A T A G A
2560 2570 2580

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

660150-8234160

FIG.10M

```

SER  SER  GLN  GLY  PHE  ARG  MET  PRO  SER  PHE
AGCTCGCAAGGCCTTTCGCATGCCAAGTTT
2590
SER  GLU  MET  TYR  GLY  GLU  ARG  PHE  GLY  VAL
TCTGAATAGTATGGCGAACGCTTTGGCGGTA
2600
SER  GLU  MET  TYR  GLY  GLU  ARG  PHE  GLY  VAL
TCTGAATAGTATGGCGAACGCTTTGGCGGTA
2610
SER  GLU  MET  TYR  GLY  GLU  ARG  PHE  GLY  VAL
TCTGAATAGTATGGCGAACGCTTTGGCGGTA
2620
SER  GLU  MET  TYR  GLY  GLU  ARG  PHE  GLY  VAL
TCTGAATAGTATGGCGAACGCTTTGGCGGTA
2630
SER  GLU  MET  TYR  GLY  GLU  ARG  PHE  GLY  VAL
TCTGAATAGTATGGCGAACGCTTTGGCGGTA
2640
SER  GLU  MET  TYR  GLY  GLU  ARG  PHE  GLY  VAL
TCTGAATAGTATGGCGAACGCTTTGGCGGTA
2650
SER  GLU  MET  TYR  GLY  GLU  ARG  PHE  GLY  VAL
TCTGAATAGTATGGCGAACGCTTTGGCGGTA
2660
SER  GLU  MET  TYR  GLY  GLU  ARG  PHE  GLY  VAL
TCTGAATAGTATGGCGAACGCTTTGGCGGTA
2670
SER  GLU  MET  TYR  GLY  GLU  ARG  PHE  GLY  VAL
TCTGAATAGTATGGCGAACGCTTTGGCGGTA
2680
SER  GLU  MET  TYR  GLY  GLU  ARG  PHE  GLY  VAL
TCTGAATAGTATGGCGAACGCTTTGGCGGTA
2690
SER  GLU  MET  TYR  GLY  GLU  ARG  PHE  GLY  VAL
TCTGAATAGTATGGCGAACGCTTTGGCGGTA
2700
SER  GLU  MET  TYR  GLY  GLU  ARG  PHE  GLY  VAL
TCTGAATAGTATGGCGAACGCTTTGGCGGTA
2710
SER  GLU  MET  TYR  GLY  GLU  ARG  PHE  GLY  VAL
TCTGAATAGTATGGCGAACGCTTTGGCGGTA
2720
SER  GLU  MET  TYR  GLY  GLU  ARG  PHE  GLY  VAL
TCTGAATAGTATGGCGAACGCTTTGGCGGTA
2730
SER  GLU  MET  TYR  GLY  GLU  ARG  PHE  GLY  VAL
TCTGAATAGTATGGCGAACGCTTTGGCGGTA
2740
SER  GLU  MET  TYR  GLY  GLU  ARG  PHE  GLY  VAL
TCTGAATAGTATGGCGAACGCTTTGGCGGTA
2750
SER  GLU  MET  TYR  GLY  GLU  ARG  PHE  GLY  VAL
TCTGAATAGTATGGCGAACGCTTTGGCGGTA
2760
SER  GLU  MET  TYR  GLY  GLU  ARG  PHE  GLY  VAL
TCTGAATAGTATGGCGAACGCTTTGGCGGTA
2770
SER  GLU  MET  TYR  GLY  GLU  ARG  PHE  GLY  VAL
TCTGAATAGTATGGCGAACGCTTTGGCGGTA
2780
SER  GLU  MET  TYR  GLY  GLU  ARG  PHE  GLY  VAL
TCTGAATAGTATGGCGAACGCTTTGGCGGTA
2790

```

APPROVED BY	O.G. FIG.
DRAFTSMAN	CLASS SUBCLASS

660750-8254760

FIG.10N

```

TYR  PHE  LYS  ASN  ARG  TYR  THR  ASP  LEU  ILE
T A T T T A A A A T C G C T A T A C C G A T T T G A T T
2800
2810
2820

VAL  GLY  LYS  SER  GLU  GLU  ILE  ARG  THR  LEU
G T T G G T A A A G T G A A G A G A T T A G A A C C C T A
2830
2840
2850

THR  GLN  GLY  ASP  ASN  ALA  GLY  LYS  GLN  ARG
A C C C A A G G T G A T A A T G C A G G C A A A C A G C G T
2860
2870
2880

GLY  LYS  GLY  ASP  LEU  GLY  PHE  HIS  ASN  GLY
G G T A A A G G T G A T T T G G G C T T T C A T A A T G G G
2890
2900
2910

GLN  ASP  ALA  ASP  LEU  THR  GLY  ILE  ASN  ILE
C A G A T G C T G A T T T G A C A G G C A T T A C A T T
2920
2930
2940

LEU  GLY  ARG  LEU  ASP  LEU  ASN  ALA  VAL  ASN
C T T G G C A G A C T T G A C C T A A A C G C T G T C A A T
2950
2960
2970

SER  ARG  LEU  PRO  TYR  GLY  LEU  TYR  SER  THR
A G T C G C C T T C C C T A T G G A T T A T A C T C A C A
2980
2990
3000

```

09/142628

APPROVED	03.FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

60750-8292760

FIG.100

```

LEU  ALA  TYR  ^ASN  LYS  VAL  ASP  VAL  LYS  GLY
CTGGCTTATAACAAGTTGATTAAAGGA
3010                                     3020
LYS  THR  LEU  ASN  PRO  THR  LEU  ALA  GLY  THR
3030                                     3040
AAAACCTTAAACCCAACTTGGCAGGACA
3040                                     3050
ASN  ILE  LEU  PHE  ASP  ALA  ILE  GLN  PRO  SER
AACATACTGTTTGATGCCATTGAGCCATCT
3070                                     3080
ARG  TYR  VAL  VAL  GLY  LEU  GLY  TYR  ASP  ALA
CGTTATGTGGTGGGCTTGGCTATGATGCC
3090                                     3100
PRO  SER  GLN  LYS  TRP  GLY  ALA  ASN  ALA  ILE
CCAGCCCAAATAAGGAGCAACGCCATA
3130                                     3140
PHE  THR  HIS  SER  ASP  ALA  LYS  ASN  PRO  SER
TTACCCATTCTGATGCCCAAATAATCCAGC
3150                                     3160
GLU  LEU  LEU  ALA  ASP  LYS  ASN  LEU  GLY  ASN
GAGCTTTTGCGAGATAAGAACTTAGGTAT
3190                                     3200

```

39/90

FIG.10P

500150" 325241.60

APPROVED	O.G.FIG:	
BY	CLASS	SUBCLASS
DRAFTSMAN		

WO 97/32980

40/90

09/142628

PCT/CA97/00163

GLY ASN ILE GLN THR LYS GLN ALA THR LYS
GGCAACATTCAACAAACAGCCACCAAA
3220 3230 3240

ALA LYS SER THR PRO TRP GLN THR LEU ASP
GCAAAATCCACGCCGTGGCAACACTTGAT
3250 3260 3270

LEU SER GLY TYR VAL ASN ILE LYS ASP ASN
TTGTCAGGTATATGTAAACATAAAGATAAT
3280 3290 3300

PHE THR LEU ARG ALA GLY VAL TYR ASN VAL
TTTACCTTGCGTGCTGGCGTGTAATAATA
3310 3320 3330

PHE ASN THR TYR TYR THR THR TRP GLU ALA
TTTAATAACCTATTACACCACTTGGGAGGCT
3340 3350 3360

LEU ARG GLN THR ALA GLU GLY ALA VAL ASN
TTACGCCAACACAGCAGAGGGCGGTCAAT
3370 3380 3390

GLN HIS THR GLY LEU SER GLN ASP LYS HIS
CAGCATACAGGACTGAGCCAAAGATAAGCAT
3400 3410 3420

[illegible]

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
	DRAFTSMAN	

FIG. 10Q

[illegible]

09/142628

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

SUBSTITUTE SHEET

FIG.11A

Q8 tpbB Sequence.

```

CCTAGGGCTGACAGTAACAACACTTTATAC      30
      20
AGCACATCATTTGATTTATTATCCCAAAATGCC      60
      40
ACACGCTATTATCTTTTGGGGCAGACTTT      90
      70
TATGATGAATAAAGTGCCACAAGACCCATCT      120
      100
GACAGCTATGAGCGTCGTGGCATACGCACA      150
      130
GCTTGGGGGCAAGAAATGGGGCGGGTCTT      180
      160
TCAAGCCGTGCCCAAAATCAGCATCAACAAA      210
      190
CGCCATTACCAGGAGCAAACTAACCCAGC      240
      220
GGTGGACAAATTCCGCCAGGATAAACAGATG      270
      250
CAAGCGTCTTTATTCGCTTTGGCACAGAGAC      300
      280

```

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

500-500-500-500

FIG.11B

A T T C A C A A T G G G G C A T C A C G C C A C G G C T G 310 320 330
 A C C A T C A G C A C A A C A T C A A T A A A G C A A T 340 350 360
 G A C A T C A A G G C A A T T A T C A C A A A A T C A A 370 380 390
 A T G T T T G T T G A G T T T A G T C G C A T T T T T G A 400 410 420
 T G G G A T A A G C A T G C C C T A C T T T T G T T T T 430 440 450
 G T A A A A A A T G T A C C A T C A T A G A C A A T A T C 460 470 480
 A A G A A A A A T C A A G A A A A A G A T T A C A A A T 490 500 510
 T T A A T G A T A A T T G T T A T T G T T T A T G T T A T T 520 530 540
 A T T T A T C A A T G T A A A T T T G C C G T A T T T T G T 550 560 570
 C C A T C A T A A A C G C A T T T A T C A A A T G C T C A A 580 590 600

09/142628

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

600150-2234160

FIG.11C

```

A T A A T A C G C C A A T G C A C A T T G T C A A C A T      620
610
G C C A A A T A G G C A T T A C A G A C T T T T T T A G      650
640
A T A A T A C C A T C A A C C C A T C A G A G A T T A T T      680
670
      MET LYS HIS ILE PRO LEU THR LEU C
      T T A T G A A C A C A C A T T C C T T T A C C A C A C T G T      710
      700
Y S   V A L   A L A   I L E   S E R   A L A   V A L   L E U   L E U   T H R
G T G T G C A A T C T C T G C C G T C T T A T T A C C G      740
730
      A L A   C Y S   G L Y   G L Y   S E R   S E R   G L Y   G L Y   P H E   A S N   P
      C T T G T G G T G G T A G C A G T G G T G G T T T C A A T C      770
      760
R O   P R O   A L A   S E R   T H R   P R O   I L E   P R O   A S N   A L A
C A C C T G C C T C T A C G C C C A T C C C A A A T G C A G      800
790
      G L Y   A S N   S E R   G L Y   A S N   A L A   G L Y   A S N   A L A   G L Y   A
      G T A A T T C A G G T A A T G C C T G G C A A T G C T G G C A      830
      820
      840

```

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

SEQUENCE

FIG.11D

SN ALA GLY GLY THR GLY GLY ALA ASN SER
 A T G C T G G C G G T A C T G G C G G T G C A A A C T C T G
 850 860 870
 GLY ALA GLY ASN ALA GLY GLY THR GLY GLY A
 G T G C A G G T A A T G C T G G C G G T A C T G G C G G T G
 880 890 900
 LA ASN SER GLY ALA GLY SER ALA SER THR
 C A A C T C T G G T G C A G G C A G T G C C A G C A C A C
 910 920 930
 PRO GLU PRO LYS TYR LYS ASP VAL PRO THR A
 C A G A C C A A A T A T A A A G A T G T G C C A A C C G
 940 950 960
 SP GLU ASN LYS LYS ALA GLU VAL SER GLY
 A T G A A A A T A A A A A G C T G A A G T T T C A G G C A
 970 980 990
 ILE GLN GLU PRO ALA MET GLY TYR GLY VAL G
 T T C A A G A A C C T G C C A T G G G T T A T G G C G T G G
 1000 1010 1020
 LU LEU LYS LEU ARG ASN TRP ILE PRO GLN
 A A T T A A A G C T T C G T A A C T G G A T A C C A C A G
 1030 1040 1050

FIG.11E

APPROVED	O.G.FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

BOUTON - Sequence

GLU GLN GLU GLU HIS ALA LYS ILE ASN THR A
 AACAGGAAGAACATGCCAAATCAATACAA
 1060 1070 1080

SN ASP VAL VAL LYS LEU GLU GLY ASP LEU
 ATGATGTTGTAATACTTGAAAGGTGACTTGA
 1090 1100 1110

LYS HIS ASN PRO PHE ASP ASN SER ILE TRP G
 AGCATATAATCCATTTGACAACTCTATTGGC
 1120 1130 1140

LN ASN ILE LYS ASN SER LYS GLU VAL GLN
 AAACATCAAAATAGCAAGAGTACAA
 1150 1160 1170

THR VAL TYR ASN GLN GLU LYS GLN ASN ILE G
 CTGTTTACAACCAAGAGAGAAACAATTG
 1180 1190 1200

LU ASP GLN ILE LYS ARG GLU ASN LYS GLN
 AGATCAATCAAAAGAGAAATAAACAA
 1210 1220 1230

ARG PRO ASP LYS LYS LEU ASP ASP VAL ALA L
 GCCCTGACAAATAAATTTGATGACGTGGCAC
 1240 1250 1260

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

660150" 82521120

FIG.11F

```

EU  GLN  ALA  TYR  ILE  GLU  LYS  VAL  LEU  ASP
TACAAGCTTATTGAAAGTTCTTGATG
1270
ASP  ARG  LEU  THR  GLU  LEU  ALA  LYS  PRO  ILE  T
ACCGTCTAACAGAACTTGCTAAACCCATT
1280
1290
YR  GLU  LYS  ASN  ILE  ASN  TYR  SER  HIS  ASP
ATGAAAATAATAATAATTCACATGATA
1330
1340
LYS  GLN  ASN  LYS  ALA  ARG  THR  ARG  ASP  LEU  L
AGCAGAAATAAGCACGCACTCGTGA TTGA
1350
1360
1370
1380
YS  TYR  VAL  ARG  SER  GLY  TYR  ILE  TYR  ARG
AGTATGTGCGTTC TGGTTATA TTTATCGCT
1390
1400
1410
SER  GLY  TYR  SER  ASN  ILE  ILE  PRO  LYS  LYS  I
CAGGTATTCTATAATA TCA TCCAAAGAAA
1420
1430
1440
LE  ALA  LYS  THR  GLY  PHE  ASP  GLY  ALA  LEU
TAGCTAAACTGGTTT TGTGATGGTGCTTAT
1450
1460
1470

```

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

SEQUENCE

FIG.11G

PHE TYR GLN GLY THR GLN THR ALA LYS GLN L
 TTTATCAAGGTACACAACCTGCTAAACAAT
 1480 1490 1500

EU PRO VAL SER GLN VAL LYS TYR LYS GLY
 TGCCCTGATCTCAAGTTAAGTATAAAGGCA
 1510 1520 1530

THR TRP ASP PHE MET THR ASP ALA LYS LYS G
 CTTGGGATTTTATGACCGATGCCAAATAAG
 1540 1550 1560

LY GLN SER PHE SER SER PHE GLY THR SER
 GACAAATCATTTAGCAGTTTGGTACATCGC
 1570 1580 1590

GLN ARG LEU ALA GLY ASP ARG TYR SER ALA M
 AACGTCCTTGCTGGTGATCGTTATAGTGCAA
 1600 1610 1620

ET SER TYR HIS GLU TYR PRO SER LEU LEU
 TGTCTTACCATGAATACCCATCTTTATAA
 1630 1640 1650

THR ASP GLU LYS ASN LYS PRO ASP ASN TYR A
 CTGATGAGAAACAACAACCAATATA
 1660 1670 1680

09/142628

FIG.11H

SN GLY GLU TYR GLY HIS SER SER GLU PHE
 A C G G T G A A T A T G G T C A T A G C A G T G A G T T T A 1700
 1690
 THR VAL ASP PHE SER LYS LYS SER LEU LYS G
 C G G T A G A T T T T A G T A A A A G A G C C T A A A A G 1730
 1720 1740
 LY GLU LEU SER SER ASN ILE GLN ASP GLY
 G T G A G C T G T C T A G T A C A T A C A G A C G G C C 1760
 1750 1770
 HIS LYS GLY SER VAL ASN LYS THR LYS ARG T
 A T A A G G G C A G T G T T A A T A A A C C A A A C G C T 1790
 1780 1800
 YR ASP ILE ASP ALA ASN ILE TYR GLY ASN
 A T G A C A T C G A T G C C A A T A T C T A C G G C A A C C 1820
 1810 1830
 ARG PHE ARG GLY SER ALA THR ALA SER ASP T
 G C T T C C G T G G C A G T G C C A C C G C A A G C G A T A 1840
 1850 1860
 HR THR GLU ALA SER LYS SER LYS HIS PRO
 C A C A G A A G C A A G C A A A A G C A A A C A C C C C T 1880
 1870 1890

APPROVED	O.G.FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

60050-2254110

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
GRAFTSMAN		

ASN LYS PRO GLY THR THR ASN PRO ALA PHE T
A T A A C C T G G T A C G A C C A A T C C G C C T T T A
2080 2090 2100

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

SEQUENCE SET

FIG.11J

```

HR  ALA  ASN  SER  LYS  LYS  GLU  LEU  ASP  ASN
CCGCTAACAGCAAAAGAACTGGATAACT      2110
                                     2120
                                     2130
PHE  GLY  ASN  ALA  LYS  LYS  LEU  VAL  LEU  GLY  S
TTGGCAATGCCCAAAGTTGGTCTTGGGTT      2140
                                     2150
                                     2160

ER  THR  VAL  ILE  ASP  LEU  VAL  PRO  THR  GLY
CTACCGTCATTGATTGTTGCCCTACCGGTG      2170
                                     2180
                                     2190
ALA  THR  LYS  ASP  VAL  ASN  GLU  PHE  LYS  GLU  L
CCACCAAGATGTCAATGAATTCAAGAA      2200
                                     2210
                                     2220

YS  PRO  LYS  SER  ALA  THR  ASN  LYS  ALA  GLY
AGCCAAAGTCTGCCCAACAACAAGCGGCG      2230
                                     2240
                                     2250
GLU  THR  LEU  MET  VAL  ASN  ASP  GLU  VAL  ILE  V
AGACTTTGATGGTGAAATGATGAGTTATCG      2260
                                     2270
                                     2280

AL  LYS  THR  TYR  GLY  TYR  GLY  ARG  ASN  PHE
TCAAAACCTATTGGCTATTGGCAGAACTTTG      2290
                                     2300
                                     2310

```

APPROVED	O.G. FIG.
BY	CLASS SUBCLASS
DRAFTSMAN	

SEQUENCE

FIG.11K

GLU TYR LEU LYS PHE GLY GLU LEU SER ILE G
 AATACCTAAATTTGGTGAGCTTAGTATCG
 2320 2330 2340

LY GLY SER HIS SER VAL PHE LEU GLN GLY
 GTGGTAGCCATAGCGTCTTTTACAAAGCGG
 2350 2360 2370

GLU ARG THR ALA GLU LYS ALA VAL PRO THR G
 AAGCACCGCTGAGAAAGCCGTACCAACCG
 2380 2390 2400

LU GLY THR ALA LYS TYR LEU GLY ASN TRP
 AAGGCACAGCCAAATATCTGGGGAAC TGGG
 2410 2420 2430

VAL GLY TYR ILE THR GLY LYS ASP THR GLY T
 TAGGATACATCACAGGAAGGACACAGGAA
 2440 2450 2460

HR SER THR GLY LYS SER PHE ASN GLU ALA
 CGAGCACAGGAAAGAGCTTTAATGAGGCC
 2470 2480 2490

GLN ASP ILE ALA ASP PHE ASP ILE ASP PHE G
 AAGATATTGCTGATTTTGACATTGACTTTG
 2500 2510 2520

09/142628

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

600750-SECRETED

FIG.11L

```

LU  ARG  LYS  SER  VAL  LYS  GLY  LYS  LEU  THR
AGAGAAATCAGTTAAAGGCCAAACTGACCA      2540
2530
      THR  GLN  GLY  ARG  GLN  ASP  PRO  VAL  PHE  ASN  I
      CCAAGGCCGCCAAGACCCCTGTATTATAACA      2580
2560
LE  THR  GLY  GLN  ILE  ALA  GLY  ASN  GLY  TRP
TCACAGGTCAAATCGCAGGTAAATGGCTGGA      2600
2590
      THR  GLY  THR  ALA  SER  THR  ALA  LYS  ALA  ASN  V
      CAGGCACAGCCAGCACCCGCCAAAGCGAACG      2640
2620
AL  GLY  GLY  TYR  LYS  ILE  ASP  SER  SER  SER
TAGGGGGCTACACAGATAGATTCTAGCAGTA      2660
2650
      THR  GLY  LYS  SER  ILE  VAL  ILE  GLU  ASN  ALA  L
      CAGGCAAATCCATCGTCAATCGAAATGCCA      2700
2680
YS  VAL  THR  GLY  GLY  PHE  TYR  GLY  PRO  ASN
AGGTTACAGGTGGCTTTTATGGTCCAAATG      2730
2710

```

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

600F90-3354160

FIG. 11M

ALA ASN GLU MET GLY GLY PHE THR HIS A
CAAACGAGATGGGCGGGTCAATTACACACG 2760
2750

SP THR ASP ASP SER LYS ALA SER VAL VAL
ATACCGATGACAGTAAAGCCCTCTGTGGTCT 2780
2770

PHE GLY THR LYS ARG GLN GLU VAL LYS *
TTGGCACAAAGACACAGAGAGTTAGT 2820
2810

**

AGTAATTAAACACAATGCTTGGTTCGGCT 2850
2840

GATGGGATTGACGCTTAATCAACATGAAT 2880
2870

GATTAGATGATAAACCCATGCCAA 2910
2900

TGATTGATAGCAACGATGGCAGATGAG 2940
2930

TTTCA TTATCTGCCATTATTGCTTAA 2970
2960

TTATTGCTTGTCATTGGTGGTGTATCAC 3000
2990

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

60150" Section

FIG.11N

```

A T T A A T C A T A A A T T A A C A T A A T A A T G A      3010
                                     3020
T T A A A T G A T A T T T A A T G A A A G T C A G G T T A      3040
                                     3050
                                     3060

T T T T G G T C A T G G T T T T C A T G A T T A T T A A      3070
                                     3080
                                     3090
C T T A T A A T G C G T T A T G G T T A G C A A A A G C T      3100
                                     3110
                                     3120

A A G T C T G T C A A T G A A G C T A T G G T G A G T G A T      3130
                                     3140
                                     3150
T G T G C A A A A G A T G G T C A A A A A A T C G G T A T      3160
                                     3170
                                     3180

G G T G C T G T C A G G C G T G G T G A T G G T T C T G T T      3190
                                     3200
                                     3210
A A T G A T A A T A A C A A C G C C A A G C C A T G C T A C      3220
                                     3230
                                     3240

T G C C A A G T T G T T G C C G A C C T C T C A G A A A A      3250
                                     3260
                                     3270
T C C A A C C A A A A C T A T G G T A G A T A G C T T T G G      3280
                                     3290
                                     3300

```

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

660150-SECRET

FIG.11.0

TCGTGAAACGCCACGAGGGGCA GTTCAGGG
3310 3320 3330

GCTATTGCCGTGCAATTGCAGCAGAA GACTA
3340 3350 3360

TGAGCTGGCTGCCA ACTATT TGGACGGCCG
3370 3380 3390

TTATTGGCAAA AACCCCAA CCGCCCAATCG
3400 3410 3420

TGAGATTGTTGAGCA
3430

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
CRAFTSMAN		

姓名	性别	年龄	民族	籍贯	职业	文化程度	政治面貌	婚姻状况	健康状况	其他
王德胜	男	45	汉族	山东烟台	教师	大学	中共党员	已婚	良好	
李小红	女	32	汉族	河南郑州	护士	中专	共青团员	未婚	良好	
张志强	男	28	汉族	四川成都	程序员	本科	中共党员	已婚	良好	
刘小芳	女	25	汉族	广东广州	设计师	大专	共青团员	未婚	良好	
陈大明	男	50	汉族	湖南长沙	工程师	硕士	中共党员	已婚	良好	
赵小丽	女	38	汉族	北京天津	会计	本科	中共党员	已婚	良好	
孙国强	男	42	汉族	浙江杭州	经理	本科	中共党员	已婚	良好	
周小梅	女	35	汉族	江苏南京	教师	大学	中共党员	已婚	良好	
吴大伟	男	30	汉族	湖北武汉	程序员	本科	中共党员	已婚	良好	
郑小娟	女	27	汉族	福建厦门	护士	大专	共青团员	未婚	良好	
冯大明	男	48	汉族	广西桂林	工程师	本科	中共党员	已婚	良好	
何小芳	女	33	汉族	江西九江	教师	大学	中共党员	已婚	良好	
吕国强	男	36	汉族	山西太原	程序员	本科	中共党员	已婚	良好	
周小梅	女	29	汉族	安徽合肥	设计师	大专	共青团员	未婚	良好	
吴大伟	男	41	汉族	四川成都	经理	本科	中共党员	已婚	良好	
郑小娟	女	34	汉族	广东广州	会计	本科	中共党员	已婚	良好	
冯大明	男	37	汉族	浙江杭州	工程师	本科	中共党员	已婚	良好	
何小芳	女	31	汉族	江苏南京	教师	大学	中共党员	已婚	良好	
吕国强	男	39	汉族	湖北武汉	程序员	本科	中共党员	已婚	良好	
周小梅	女	26	汉族	福建厦门	护士	大专	共青团员	未婚	良好	
吴大伟	男	43	汉族	广西桂林	工程师	本科	中共党员	已婚	良好	
郑小娟	女	32	汉族	江西九江	教师	大学	中共党员	已婚	良好	
冯大明	男	35	汉族	山西太原	程序员	本科	中共党员	已婚	良好	
何小芳	女	28	汉族	安徽合肥	设计师	大专	共青团员	未婚	良好	
吕国强	男	40	汉族	四川成都	经理	本科	中共党员	已婚	良好	
周小梅	女	30	汉族	广东广州	会计	本科	中共党员	已婚	良好	
吴大伟	男	38	汉族	浙江杭州	工程师	本科	中共党员	已婚	良好	
郑小娟	女	36	汉族	江苏南京	教师	大学	中共党员	已婚	良好	
冯大明	男	34	汉族	湖北武汉	程序员	本科	中共党员	已婚	良好	
何小芳	女	29	汉族	福建厦门	护士	大专	共青团员	未婚	良好	
吕国强	男	44	汉族	广西桂林	工程师	本科	中共党员	已婚	良好	
周小梅	女	37	汉族	江西九江	教师	大学	中共党员	已婚	良好	
吴大伟	男	32	汉族	山西太原	程序员	本科	中共党员	已婚	良好	
郑小娟	女	31	汉族	安徽合肥	设计师	大专	共青团员	未婚	良好	
冯大明	男	42	汉族	四川成都	经理	本科	中共党员	已婚	良好	
何小芳	女	33	汉族	广东广州	会计	本科	中共党员	已婚	良好	
吕国强	男	39	汉族	浙江杭州	工程师	本科	中共党员	已婚	良好	
周小梅	女	35	汉族	江苏南京	教师	大学	中共党员	已婚	良好	
吴大伟	男	36	汉族	湖北武汉	程序员	本科	中共党员	已婚	良好	
郑小娟	女	30	汉族	福建厦门	护士	大专	共青团员	未婚	良好	
冯大明	男	45	汉族	广西桂林	工程师	本科	中共党员	已婚	良好	
何小芳	女	38	汉族	江西九江	教师	大学	中共党员	已婚	良好	
吕国强	男	33	汉族	山西太原	程序员	本科	中共党员	已婚	良好	
周小梅	女	32	汉族	安徽合肥	设计师	大专	共青团员	未婚	良好	
吴大伟	男	41	汉族	四川成都	经理	本科	中共党员	已婚	良好	
郑小娟	女	34	汉族	广东广州	会计	本科	中共党员	已婚	良好	
冯大明	男	40	汉族	浙江杭州						

FIG. 12A

Top1 alignment

	10	20	30	40	50	60
MMNQSKQNNKSKKQV	KL	SALS	GLINI	--TQ	VALANTADKAE	-TDKINLVVILDET
---	---	---	---	---	---	---
Q.QHLFR	---	NILC	---	MT.	PVY	---
Q.QHLFR	---	NILC	---	MT.	PAY	---
Q.QHLFR	---	NILC	---	MT.	PAY	---
TKKPYFR	---	LSI	ISC.LI	CYVKA	E..SIKDTKE	ISS.VD.QS.E-DSE.ETIS..

AKKNA-RKANEVTGLGKVVKTAEITINKEQVILNIRDLTRYP

AKNA-RKANEVIGLGKVVKTAEITINKEQVLNIRDLTRYDP	4223
.....	Q8
.....QKT.RD.....L.SSD.LS.....	B16B6
.....QKT.RD.....L...D.LS....D.....	M982
.....QKT.RD.....L...D.LS....D.....	FA19
.....E.IRD..D.....II..S.S.SR.....	Eagan

110	120	130	140	150	160
GLIAVEQFRCASSYSG	MDKNRVAVLVDG	INQAHYALQGPVAG	KNYA-ACGAINET	EYEN	
.....
.....	.....	SLT	VS.I.S.TA.AALG	TRT.GSS	.....
.....	.....	SLT	LA.I.S.TA.AALG	TRT.GSS	.....
.....	.....	SLT	LA.I.S.TA.AALG	TRT.GSS	.....
S.....	.....	R.....	LP.T.S.W.S.LVATSG	YSGT	.....

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
CRAFTSMAN		

60130" 60130" 60130"

FIG.12B

WO 97/32980

58/90

09/142628

PCT/CA97/00163

170 180 190 200 4223
 VRSVEISKANSSEYSGALSGSVAFVTKTADDIIKDG

 .KA.....S.....N...A.....Q....A...GE.
 .KA.....S.V.Q.....A.....Q.....V.GE.
 .KA.....S.V.Q.....A.....Q.....V.GE.
 .KA.....GS.....N...A...T.QS.S.A..LEGD
 Q8
 B16B6
 M982
 FA19
 Eagan

210 220 230 240 250 260
 KDWGVQTKTAYASKNNWNSVAAAGKAGSFGSLIYTDPRGQYKAHDDAYQGSQSFDRAVA

 .Q..I.S....SG.DH.LTQ.L.L..RS.GAEA.L...K...R.IH.K.KK.V...N.L.L
 RQ..I.S....SG..RGLTQ.I.L..RI.GAEA.L.H.G..AG.IR..E..GR.V...N.L.P
 RQ..I.S....SG..RGLTQ.I.L..RI.GAEA.L.H.G.HAG.IR..EA.GR.V...N.LAP
 .S..I...N..S...KGFTH.L.V...Q.G.E..A...Q.NSI.TOV.K..LK.V..Y..LI.

270 280 290 300 4223
 TTD-----PNNRTFLIANECANFNYEACAAGGQTKLOAKPTN
PK.....
 DE.KKEGGSQY.Y.IVEE..H...-A..KNKL--ED.SVKD
 VE.-----SSEYAY.IVED..EGK...T.KSKP--KDWGKD
 VE.-----GSKYAY.IVEE..K..GH.K.K.NP--KDWGED
 ...-----KSSGY.V.QG..P..DDK-...-----PP.TLST
 Q8
 B16B6
 M982
 FA19
 Eagan

APPROVED	O.G. FIG.	
BY	CLAYS	SUBCLASS
CRAFTSMAN		

FIG. 12C

FIG. 12C

VRDKVNVKDYTGPNRLIPNPLTQDSKSLILRPGYLNDK-HVVGVEITKQNYAMQDKTVPA

310 320 330 340 350 360

E.KT.STQ...S...LA...EYG.Q.W.F...WH.DNR-...A.L.R.Q.TFDIR.M....

E.QT.STR...FLAD...SYE.R.W.F...FRFENKR...I...IL.H.Q.TFDIR.M....

K.QT.STR...FLAD...SYE.R.W.F...FRFENKR...I...IL.R.Q.TFDIR.M....

QSET.S.S...A.IK...MKYE.Q.WF...G.HFSEQ-...I...IF.F.Q.KFDIR.M.F...

370 380 390 400

YLTJVDIEKSRLSNHAQA--NGYYQGNLGERIRDITIGPD

.....G.....A..AN

.F.SE.YVPGS.KGL-----K.S.D.KA..LFVQGECS

F..KAVFDANSKQAGSLPG-.K.A..HKYGGIFTINGENG

F..KAVFDANQKQAGSLPG-.K.A..HKYGGIFTSGENN

..SPTERDDSSRSFYPMQDH.A..HIE-----

4223

Q8

B16B6

M982

FA19

Eagan

410 420 430 440 450 460

-----SGYGINYAHGVFYDEKHQKDELGLEVVYDSKGENKWFDDVRVSYDKQDITLRSQJTNTHC

TLQGI...T...R.T.N.Y.V...HNADKDT.A.YA.L...R.G.D.DNR.QQ...

-----ALV.AE.GT...T.T.S.Y...TNADKDT.A.YA.L...R.G.G.DNHQQ...

-----APV.AE.GT...T.T.S.Y...TNADKDT.A.YA.L...R.G.G.DNHQQ...

-----D.R.VK..S.LYF..H.R.Q.V.I..I.EN.NKAGII.KAVL.ANQ.N.I.D.YMRH...

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
CRAFTSMAN		

FIG.12D

WO 97/32980

60/90

09/142628

PCT/CA97/00163

470 480 490 500
STYPHIDKNCPTDVKPFSVKEVDNNAYKEQHNLKAVFN
4223
Q8
B16B6
M982
FA19
Eagan

510 520 530 540 550 560
KKMALGSTHHHINLQVGYDKFNSSLREDYRLATHQSYQKLDYTPPSNPLPDKF-KPILGSNN
.....N.....
AFDTAKIR.NLSINL...R.K.Q.HS.Y.QNAVQAYD.I-...KP.F.NGS-.-D
SFDTAJUR.NKSVNK.F.R.S.B.RHQ..YQHANRAYSSK-...KTAN.NGD-.-S
SFDTAKIR.NLSVNL...T.G.N.RHQ..YQSANRAYS.K-...Q.NGKTS-.-PN.REK
..IQQNWLT.Q.VFNL.F.D.T.A.QHK..-TRRVIATA-.SI.RK-.-.GETG..RN.LQS

570 580 590 600
KPICLDAYGYGHDHPQACNAKNSTYQNFALKKGIEQYN
R.....
N.YRVSIGK-----
..YVWSIG.-----
N.YVWSIGR-----
Q.YLYPKPEP-----
4223
Q8
B16B6
M982
FA19
Eagan

FIG.12E

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

660 650 640 630 620 610

QKTNTDKIDYQALIDQYDKQNPNSTLKPFEKIKOSLGQEKYNKIDELGFKAYKDLRNEWAGWT
V.....DE..R...N.....

670 680 690 700
NENSOQANANKGRDNIYQPNQA-TVVKDDCKYSEINS-Y
.....-.....
-----T..NTSPI.RFCN-.T-..
-----GN..TGQI.LFCN-.T-..
-----GN..TRQI.LFCN-.T-..
-----YFAGQDH-.N.QGSS.N.

4223
Q8
B16B6
M982
FA19
Eagan

710 720 730 740 750 760
ADCSTTRHISGDNFYIALKDNMTINKYVDLGLGARVDRIKHKSDVPLVDNSASNQLSWNFVW
.....
T...-P.N.G.NG.YA.VQ..VRLGRWA.V.A.I...YRSTH.EDKS.STGTHRN....A...
T...-P.S.N.KS.YA.VR..VRLGRWA.V.A.L...YRSTH..DGS.STGTHRT....A.I..
T...-P.S.N.KS.YA.VR..VRLGRWA.V.A.L...YRSTH..DGS.STGTHRT....A.I..
R...-KV.L.K.K..YF.ARN..ALG.....I...VSRT.ANESTISVGKFNF...T.I..

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
BRATSHAN		

FIG.12F

770 780 790 800
VKPTNMLDIAYRSSQGFMPSEMYGERFGVTICKG 4223
..... Q8
L..FT.M.LT..A.T..L...A...W.A.ESLKTIL B16B6
L..AD...LT..T.T..L...A...W.S.OSKAV M982
L..AD...LT..T.T..L...A...W.S.DK.KAV FAL9
I...E...LS..L.T..N.....W.Y.GKNDEV Eagan

810 820 830 840 850 860
TQHGCKGLVYICQQTIVHQTKLPEKSFNQEIGATLHNLGSLEVSFYKNRYTDLIVKSEIR
.....
-----D.....R.A.IVFKGDF.N.A...N.A.R...AFGY-.T.
-----ID.....K.A.IVFKGDF.N.A.W.N.A.R...RGY.AQI
-----ID.....K.A.IVFKGDF.N.A.W.N.A.R...RGY.AQI
-----YVG.F...T.R...F.LA.KGDF.NI.I.H.S.A.RN..AFA-..LS

870 880 890 900
TLTQGDNAGKQKRGDLGFHNGQDADLTGINILGRLD 4223
.....N.....K. Q8
-----QN.QTSAS..P.YR.A.N.RIA.....KI. B16B6
K-----N..EEA...PAYL.A.S.RI.....KI. M982
K-----D..EQV..NPAYL.A.S.RI.....KI. FAL9
K-----NGT...NY.Y..A.N.K.V.V..TAQ.. Eagan

FIG.12G

APPROVED	O.G.FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

FIG. 12G

910 920 930 940 950 960
 LNAVNSRLPYGLYSTLAVNKVDVKGKTLNPTLAG-TNILFDAIQPSRYVVGGLGYDAPSQKMG

 WHG.WGG.D.....RIK.DADIRADRTFV.SY...V.....L.....H.DGI..I
 WNG.WDK..E.W...F...R.H.RDIKKRADRTDIQSH.....Q.EG...V
 WNG.WDK..E.W...F...R.H.RDIKKRADRTDIQSH.....S...Q.EG...V
 F.GLMK.I...W.A.F...Q.K..DQKI.AG..SVSSY.....II.....H.NT..I

970 980 990 1000
 NALFTHSDAKNPSELLADKNLGNENIQ-TKQATKAKSTP

4223
 Q8
 B16B6
 M982
 FA19
 Eagan

1010 1020 1030 1040 1050 1060 1070
 WQTLDLGSYVNIKNFTLRAGVYVNFVYTYTWEALRQTAEGAVNQHTGLSQDKHYGRYAAPGRNYQLAEMKF* 4223

 YVT.V...Y...KHL.....LL.YR.V...NV...G.....---KNVG.V.N.....TFS.....*
 YTV.V...YT...KH.....LL.YR.V...NV...G.....---KNVG.V.N.....TFS.....*
 YTV.V...YTV.KH.....LL.HR.V...NV...A.....---KNVG.V.N.....TFS.....*
 HI.V...YMANK.IM.L.I.L.YR.V...V...Q.....---QNVGS.T...S...T.T.....*

Q8
 B16B6
 M982
 FA19
 Eagan

[illegible]

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

FIG. 13A

Top2 comparison

	10	20	30	40	50	60	
MKHIPLTTLCVAISAV-LLTACGS-GGSPAPTPIPNASCSNTGNVAGGTDTN-ANAG							4223
.....S.F....S.....CN..A.A.....GGANSG..							Q8
NN-.VNQAAMWLP.F.S.L.G-...-----							B16B6
NN-.VNQAAMWLP.F.S.L.G-...-----							M982
NN-.VNQAAMWLP.F.S.L.G-...-----							FA19
.SV..ISEGLS----F.S.S.--...-----							Eagan
	70	80	90	100			
NTGGT--NSGTGSANTPEPKYQDVPTKEKEDK-VSSIQEPAM							
A...CGA...A.S.....K....DE.K.AE-.G.....							
-FDLDSVE---VQDMHSK...EDEKS-QP.SQQD..ENSGA.-							
-FDLDSVD---EAPRPA-.....SS..PQAQ.D-----QG							
-FDLDSVD---EAPRPA-.....PSK.P.AR.D-----QG							
-FDVDNV--.N.P.---SK.R...DTSNQRK.S-NLKLF.I.SL							

1.10	120	130	140	150
GYCVALSKINLHNQDTPLD-EKNIITL--DGKKQVAEG-KKSPLPFS-LDV-ENKLLDGYIA				
...VE.-.LRNWIP.EQEEH-A.IN-.N--.VV.LEGDL-.HN.FDN.IWQNIK.SKEVQIVY				
-.F.V-.L.PRR.AHFN.KYK.HKP.GSM.W-----.-LQGEPNFS.RDE.E----				
...F.M-RLKRR.WYP--GAE.SEVK.NES.WEATGLPTKP.E-...KRQKS.I.KVET..D-S				
...F.M-RITRR.WHPSANPK.DEVK.KND.WEATGLPTEP.K-.LKQOS.ISEVEIN.N-S				
.G..K.VAQ..RGNKEPSFIN.DDY.-----SY..S.STI.KOVK.NNK-				

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

FIG.13B

160 170 180 190 200 4223
KMNVDKNAIGDRIKKNKEISDEELAKQIKEAVRKSHEFOQV-
NQEKNIEDQIK.EN.QRPDKLDDV.L.AYIEKVLDDRLTELA
-----K.R.SS.LI-.SKWEDQSR.VGYTN.T---
DIYSSPYLTPSNHONG-----AGNGVN.P.NOATGHEN.---
..YTSPYLSQDADS-----HANG.N.P.NE.TDYKK.-----
--G.--L..S-.-----PSTINPP.K-----HG.---

210 220 230 240 250 260
LSSLENKIFHSNDGTTKATTRDLKYVDYGY-YLANDGNVLTIVKTDKLMNLGPPVGVFYNGTTT
KPIY.KN.NY.H.KQN..R.....RS..I.RSGYS.---IIPK.IAKT.FD.AL..Q..Q.
-----RS..V..-KN.IDIKNNIV.F---D.YLY.K.KEP
-----YS.WF.KH.ASEKDFSN.KI.S---DD.YI..H.EK
-----YS.WF.KH.KSEVKNENGLVSAKR-.D.YI..H.DK
-----YS.LY.TPSWSLINDS-.N-.FY-.YY.YA..Y.NK.

270 280 290 300 4223
AKELPTQDAVKYKGHWDFMTDVANRRNRFSEVKENS--QA
..Q..VSQ-.....T.....-KKGQS..SFGT-.QRL.
S....-SEKIT...T..YV.AME-KQ...-GLG-.A..G
PSRQ..ASGK.I...V.H.V..TKKGQD.R.IIQP.KK.G
PSRQ..ASE..T...V.H.V..TKQGQK.NDIL.T.KG.G
..TN..VNGVA....T...I.ATK.-CK.YPLLSNG.H.--

APPROVED	O.G. FIG.
BY	CLASS
DRAFTSMAN	SUBCLASS

FIG. 13C

FIG.13C

310 320 330 340 350 360
 GWYYGASSKD-EYNRLITKEDSAPDGHSGEYGHSSFTVNFKEKKLTGKLSN---LQDRHKCN
 .DR.S.M.YH-.PS...D.KNK..NYN.....D.SK.S.K.E.S.---I..G...S
 DK-S..L.AL-.EGV.RNQAE-ASS..TD-F.MT...E.D.SD.TIK.T.YR.NRIT.NNSENK
 DR.S.F.GDGS.EYSNKN-.STLK.D.E.-..FT.NLE.D.GN.....IR.NAS.NNNNNND
 DK.S.F.GDEG.TTSNR.-DSNIN.K.E.-..FT.N.K.D.NN.....IR.NKVINTAASDG
 ---RR-.AIP.DID.EN-DSKNG.-I.-----LI....SADGGT.....Q.-.YTKRKTNNQPYE
 370 380 390 400

VTKTERYDIDANIHCNFRGSAATASNK--NDTSK-HPFTSDAN 4223
 .N..K.....Y.....DTTEASK.-.....K Q8
 QI..T..T.Q.TL.....K.K.L.AD.--GA.NGS...I..SD B16B6
 KHT.QY.SL..Q.T...N.T...TD.K-ENET.L...V..SS M982
 Y.-.Y.SL..TLR.....S.K.I.TD.PNIGGT.L...VF.SS FA19
 KK.L--.....D.YS.....TVKPTE.---SEE-.....EGT Eagan

410 420 430 440
 NRLEGGFYGPKEGELACKFLTNKLVFGAKRESK-----AEEKTE-----
 .S.....NA.....E-----K....-----
 S-.....S...VAA.....QKD.KDGENA.GPA.-----
 S-.S...F..Q....GFR..SD.Q.VAV.GS...TKD.LENGAA.SGS.G-AAASGGAAGTSSE
 S-.S...F..Q....GFR..SD.G.VAV.GS...TKDST-----NGNAP-AASSGPGAATMPS
 ---.....NA...G....AT..RV....S..ETEETKEALS.K.TLIDGKLITFTKKIDA

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

FIG. 13D

FIG.13D

WO 97/32980

67/90

PCT/CA97/00163

97/142628

450 460 470 480
 ----AILDAYALGTFNFSNAT--TFPTPTEKQLDNFGNAKLV 4223
 ----KPGT.NPA..ANSK.E..... Q8
 ----TVI...RIT-----GEEFKKE.I.S.DV...L B16B6
 NSKLTV...VE.T-----LNDKKI.N....S..AQ.. M982
 ETRLTV...VE.T-----PDGKEI.N....S..TR.. FA19
 KINATTSTA.NTTIDTTANTI.D--EKN.KTEDISS..E.DY.L Eagan

490 510 520
 LGSTVIDLVP-----TDATK--NEFTKDK---PESATNEAGEITMUNDEVSV-----
G...DV...E...K...K.....I.-----
 VDGVELS.L.--SE-GNKAA-----FQHEI.-----
 VDGIM.P.L.KDSESGNTQADKGKNGG--T...RKFHT...DKKD.QAGTQINGAQIASNIA
 VDGIM.P.L.--TESGNGQADKGKNGG--TD..YEITYT...DKKDIKAQIGAGCMQTASGIA
 IDKYP.P.L.-----DKNTN-----FI.SK-----

530 540
 ----KTYGKN-----FEYLFKGELSIGGSH 4223
 ----YGRN----- Q8
 --QNGVKAT-----VCCSNLD.MS..K..KENKD B16B6
 GDINGK--T...EVE-VCCSNIN...Y.M.TRKN.K M982
 GVNGGQVGT...KVQ-VCCSNLN...Y.L..RENNN FA19
 --HHTVGN-.R.KVEAVCCSNSDVKS.MYVEDPLKE Eagan

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

09/142628

WO 97/32980

68/90

PCT/CA97/00163

FIG.13E

550 560 570

SVFLQCERTATIGEKAVPTIGTAKYLG

-----E.

DM...V..PVSDVA.-R.EAN...R.

NSSQADAKTEQVEQ.M.....-D..EI..DQNV.R.

NSSQADAKTKQIEQ.M.....-D.NKI.QEQGIV...

KETETETETEKKEKEKDKKEKQTAATINTYYQ--..L.H..---PKDDI.K.S...H.

580 590 600 610

NWVGYYT-GKDIGIGTCKSFYDAQDVADFTIDFNGKSVSGK

.....S.....NE...I...D...ER...K..

T.Y...AN.-TSWS.EA-.NOEGENR.E.DV..ST.KI..T

S.Y.H.AN.-TSWS.NA-.DKEGENR.E..VN.AD.KIT..

F.Y.R.AN.-TSWS.KA-.NATDGENR.K..VN.DR.EIT.T

S.Y....D..TSYSPS.DKKR.KNA..E.NV..AE.KLT.E

4223
Q8
B16B6
M982
FA19
Eagan

620 630 640 650 660 670

LITKGRQDPVFSITGQIAG--NGMIGTASITTKADAGYKIDSSSTGKSIA--IKDANVTGFGYG

.T.Q.....N.....A..NV.....V--.EN.K.....

.TA.D.TS.A.T..AM.KD--..FS.V.K.---GEN.FAL.PQN..N.HYTH.-E.T.S.....

.TAEN..AQT.T.E.M.Q.--..FE...K.---AES.FDL.QKN.TRIPKAY.T..K.K.....

.TAEN.SEAT.T.DAM.E.--..FK...K.---GND.FAP.QNNSTVTHKVH.AN.E.Q.....

.KRHDTCN.....EAFNFNSS.AF....TA.-----NFV..GKNSQNKNTPINITK.N.A....

650150-82927160

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
BRAFTSHAH		

WO 97/32980

69/90

09/142628
PCT/CA97/00163

FIG.13F

680
PNANEMGGSFT-----NADDSKASV
.....HDT.....
K..I.....SFFGNAPEGKOE-----
.K.E.L..W.AYPGDKQTEKATATSSDG---.SAS.-.T.
...E.L..W.AYPGNEQTKNAIVESGNG---.SAS.-.T.
.K.S.L..Y..YNGNSTATNSESSTVSSSS.SKNAP.A.

700

VFGTKRQOEK-K*
.....E.-.*
...A....L.Q-*
...A....P.Q-*
...A....K.L.-.*
...ARQ.V.TT.*

4223
Q8
B16B6
M982
FA19
Eagan

APPROVED	O.G. FIG.
BY	CLASS
BRAFTSHAH	SUBCLASS

DATA IS UNCLASSIFIED

WO 97/32980

70/90

9/142628

PCT/CA97/00163

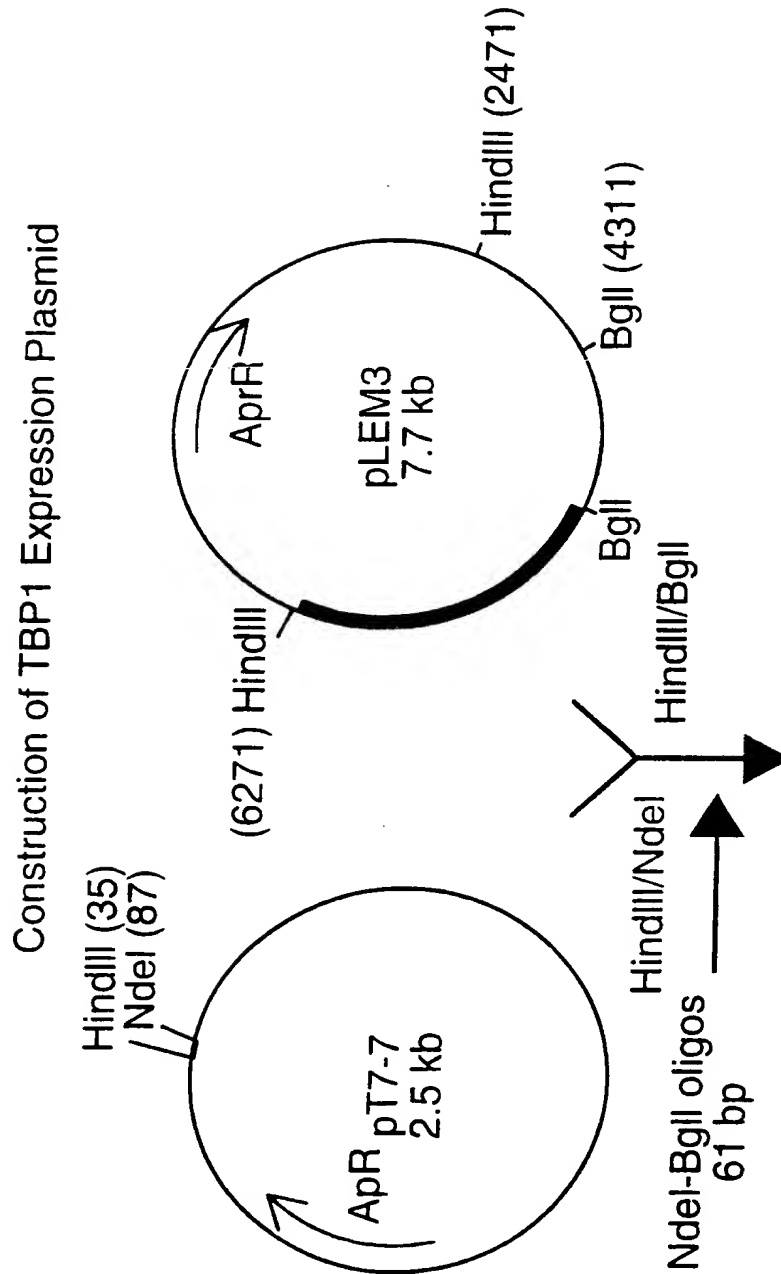


FIG.14A

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
GRAFTSMAN		

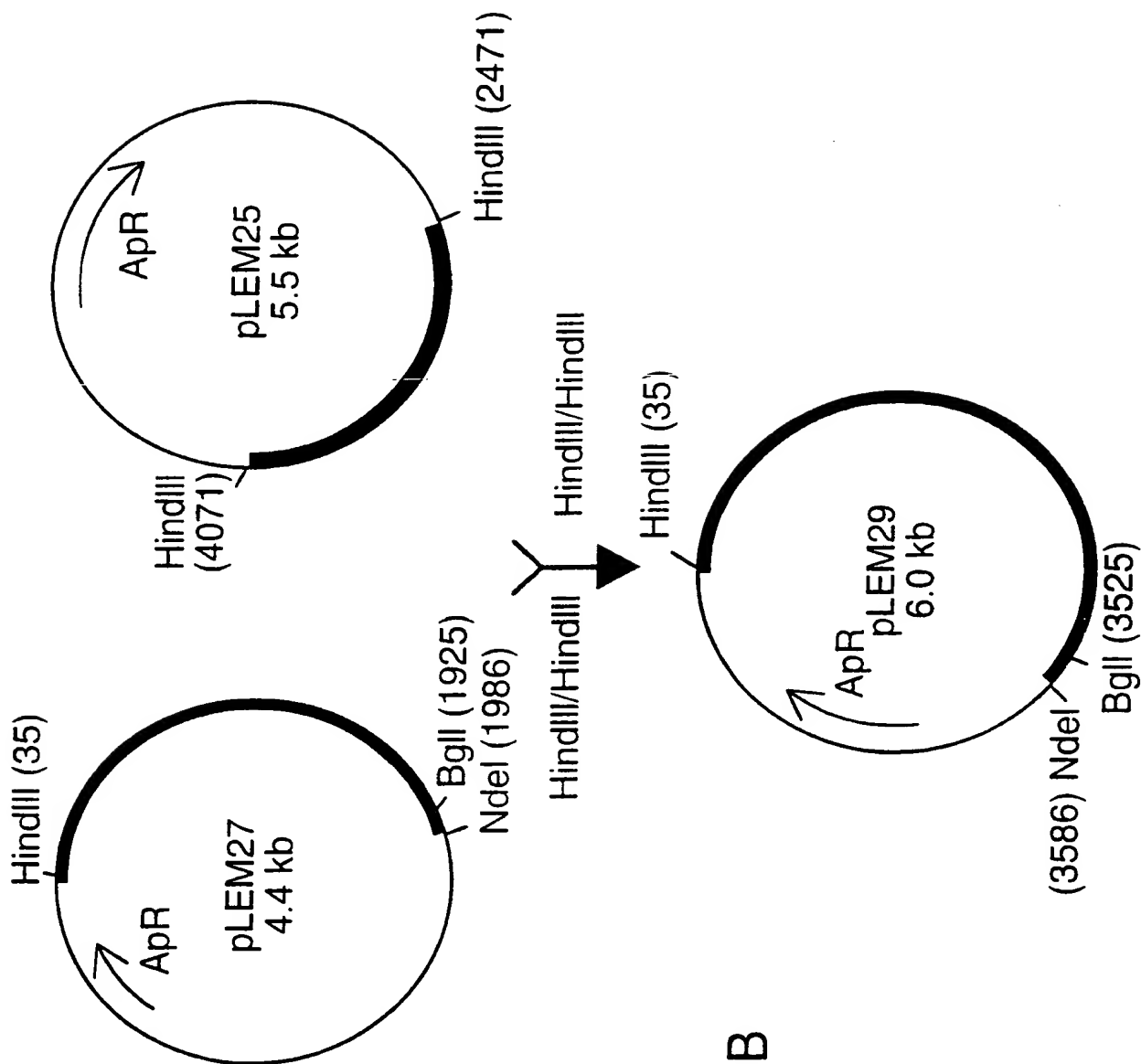
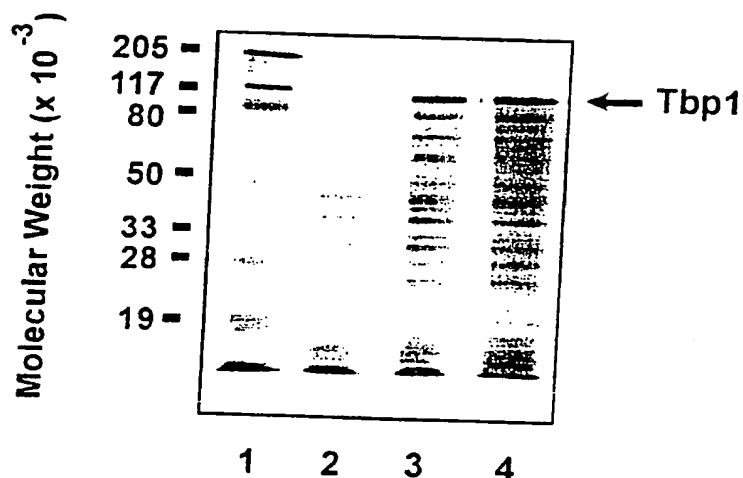
[illegible]

FIG. 14B

Expression of rTbp1 in *E. coli*

APPROVED BY BRAFTSMAN	O.G. FIG.	
	CLASS	SUBCLASS



1. Prestained molecular weight markers
2. pLEM29B-1 lysate, non-induced
3. pLEM29B-1 lysate, 1 hr post-induction
4. pLEM29B-1 lysate, 3 hr post-induction

Fig.15

Purification of Tbp1 from *E. Cole*

APPROVED	O.G. FIG.		SUBCLASS
	CLASS		
	BY		
	DRAFTSMAN		

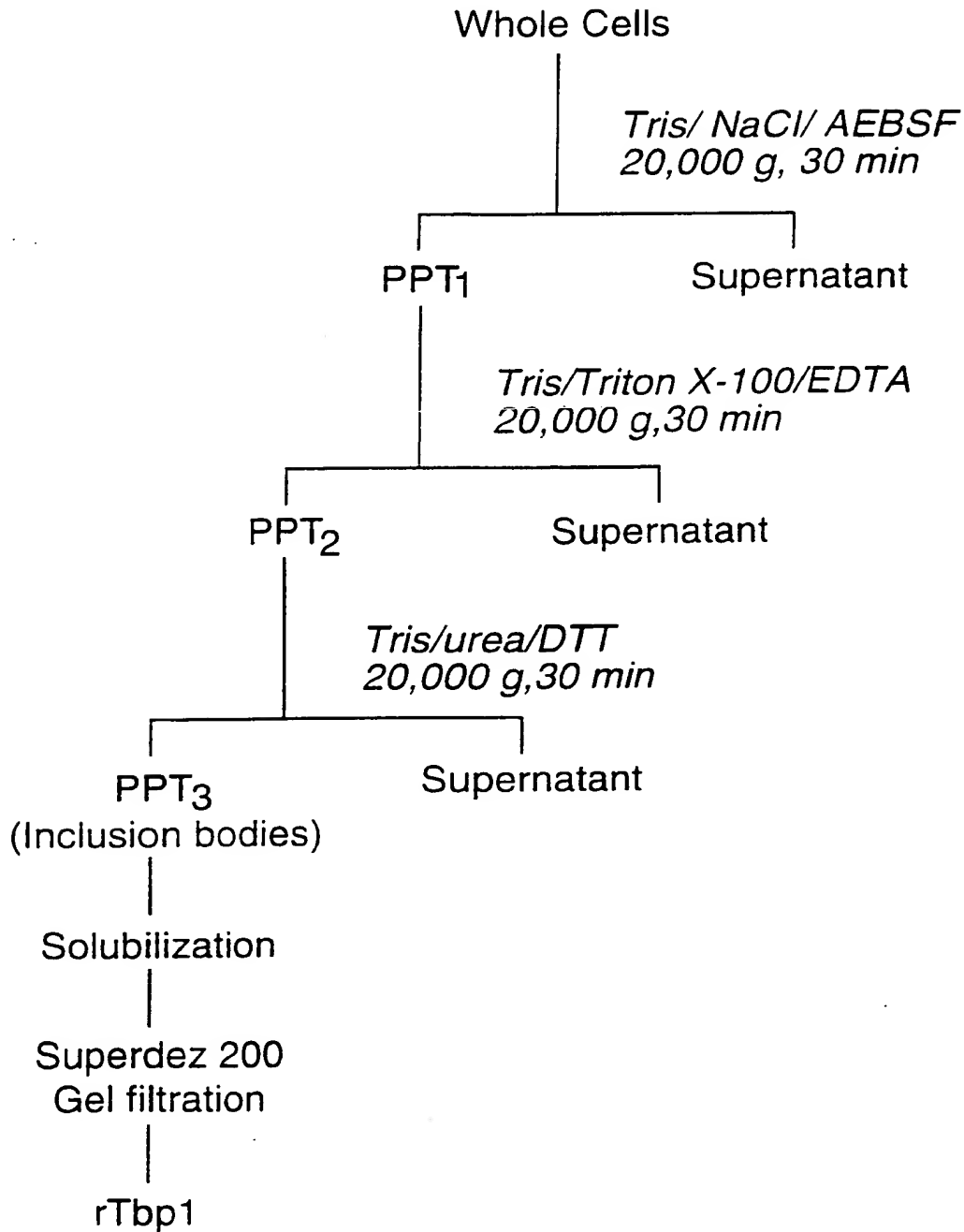
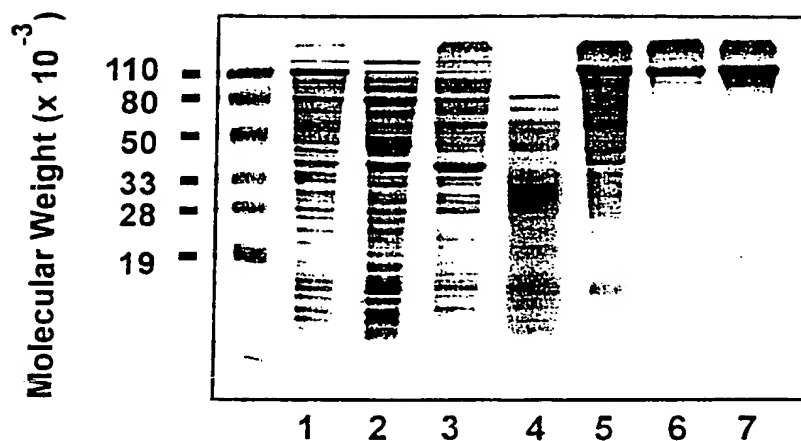


FIG.16

APPROVED BY	O.G. FIG.	
	CLASS	SUBCLASS
DRAFTSMAN		

Purification of rTbp1 from *E. coli*



1. *E. coli* Whole cells
2. Soluble proteins after 50 mM Tris/ NaCl extraction
3. Soluble proteins after Tris/ Triton X-100/ EDTA extraction
4. Soluble proteins after Tris/ urea/ DTT extraction
5. Left-over pellet (rTbp1 inclusion bodies)
- 6.7. Purified rTbp1

Fig.17

APPROVED	O.G. FIG.
BY	CLASS
DRAFTSMAN	SUBCLASS

660150-2254160

CONSTRUCTION OF TBP2 EXPRESSION PLASMID

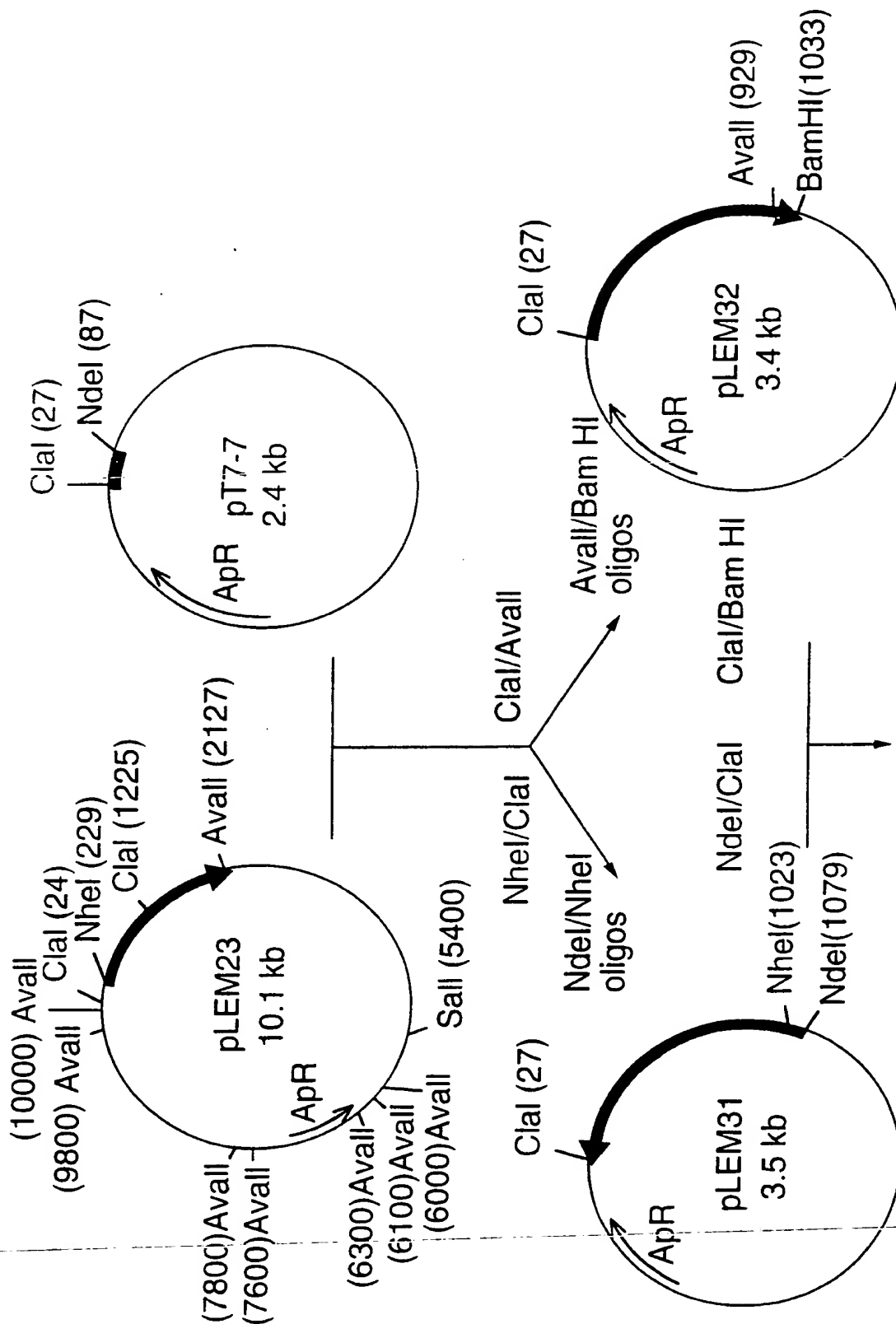
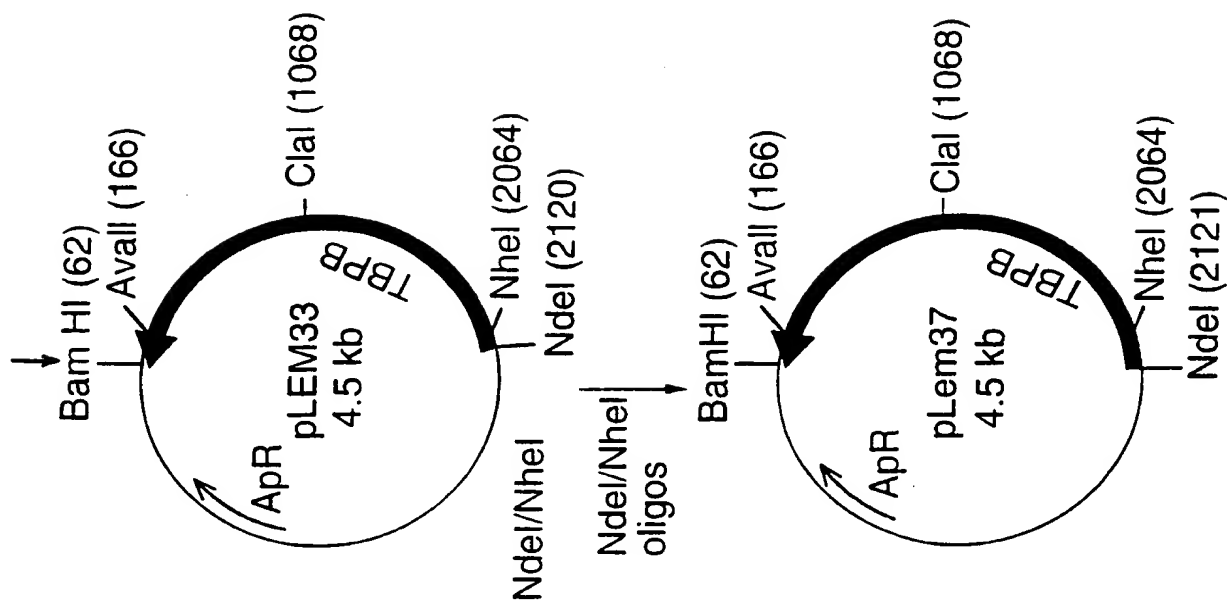


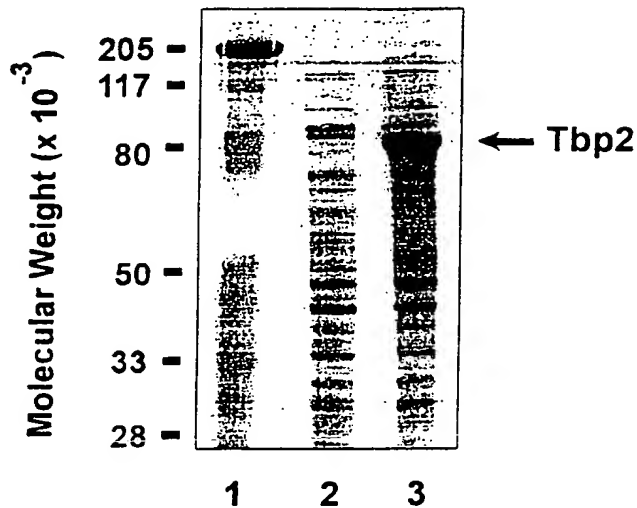
FIG.18A

APPROVED	O.G. FIG.
BY	CLASS
DRAFTSMAN	SUBCLASS

FIG.18B



Expression of rTbp2 in *E. coli*



1. Prestained molecular weight markers
2. pLEM37B-2 lysate, non-induced
3. pLEM37B-2 lysate, induced

Fig.19

APPROVED	O.G. FIG.
BY	CLASS
DRAFTSMAN	SUBCLASS

660160-6254160

WO 97/32980

78/90

9/142628

PCT/CA97/00163

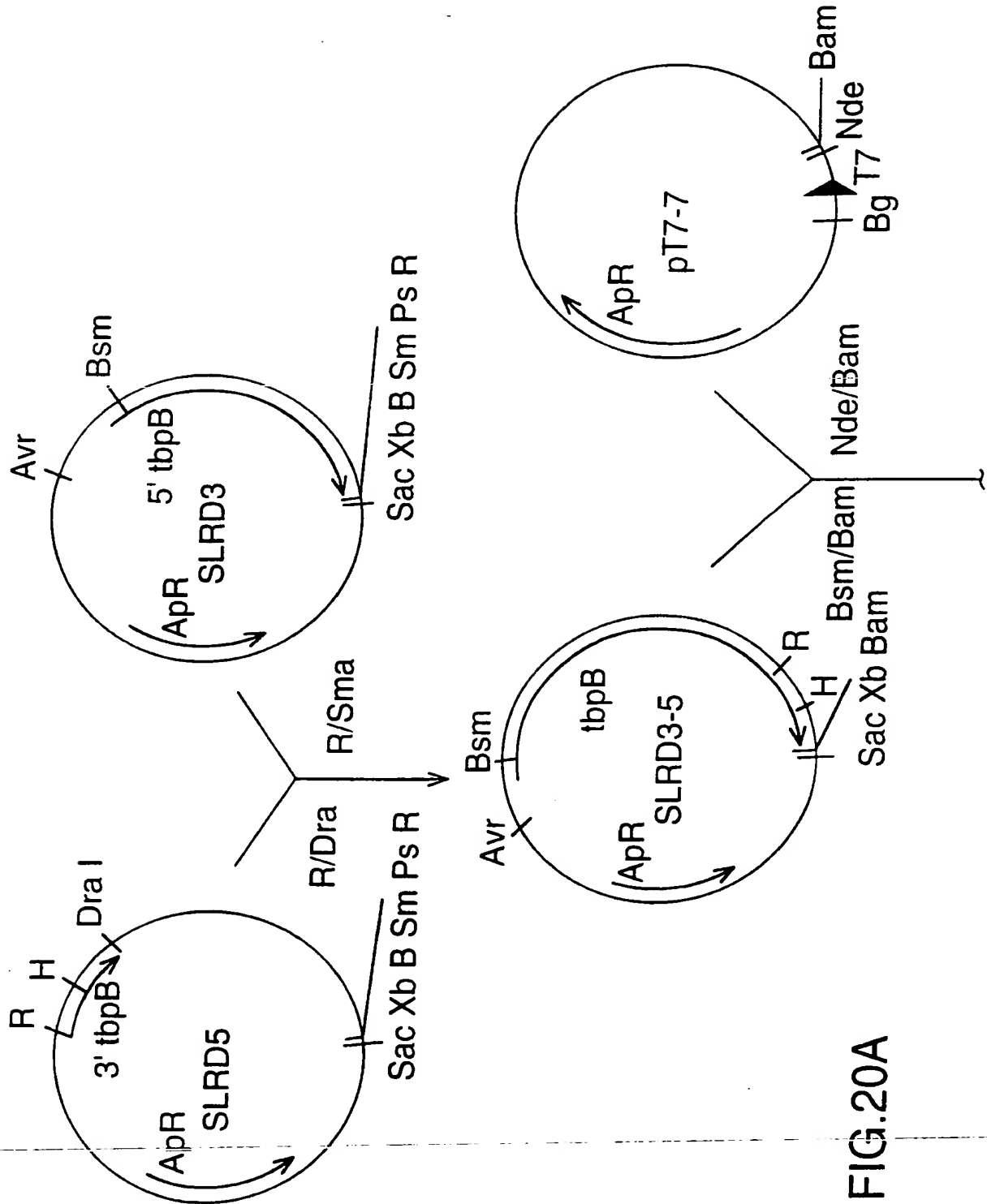


FIG.20A

APPROVED	O.G. FIG.
BY	CLASS
DRAFTSMAN	SUBCLASS

600750" SECTION

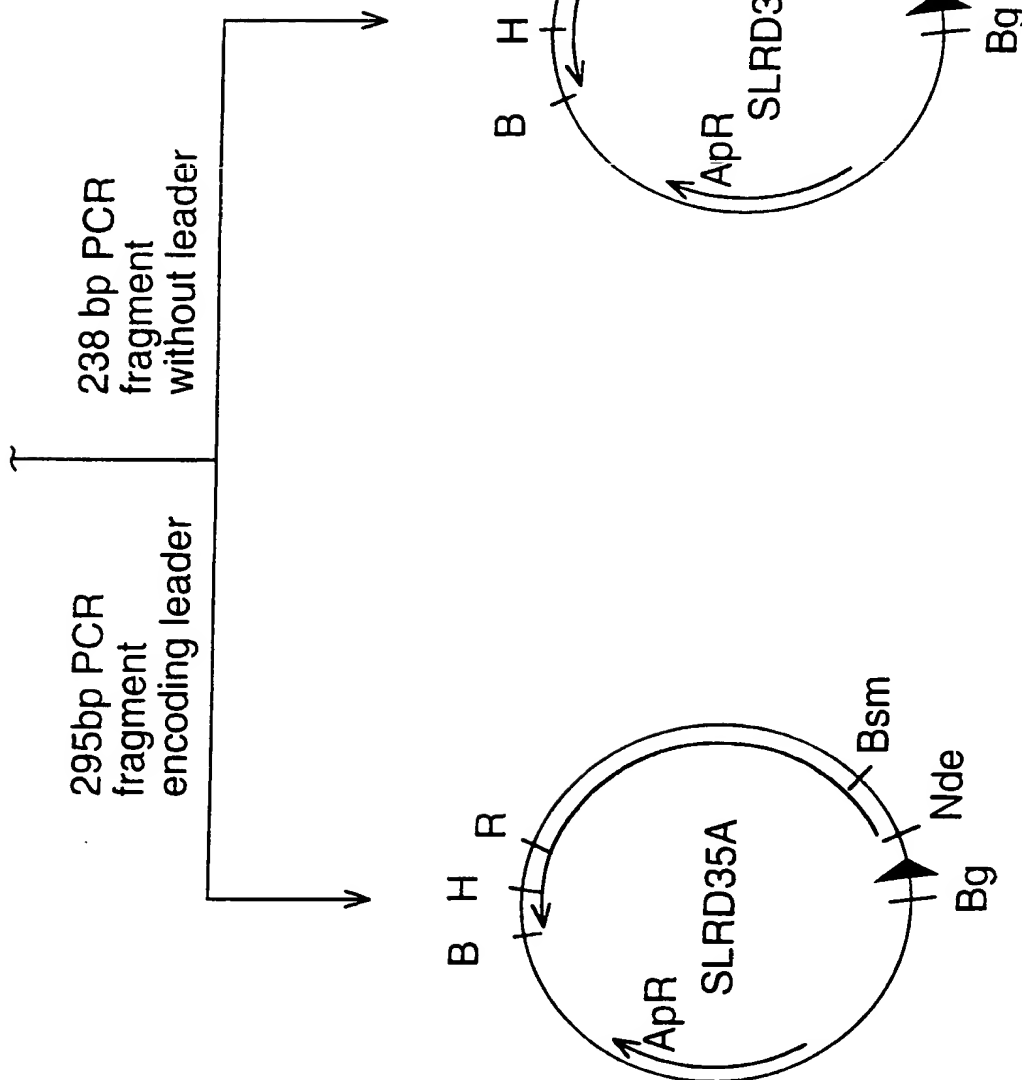
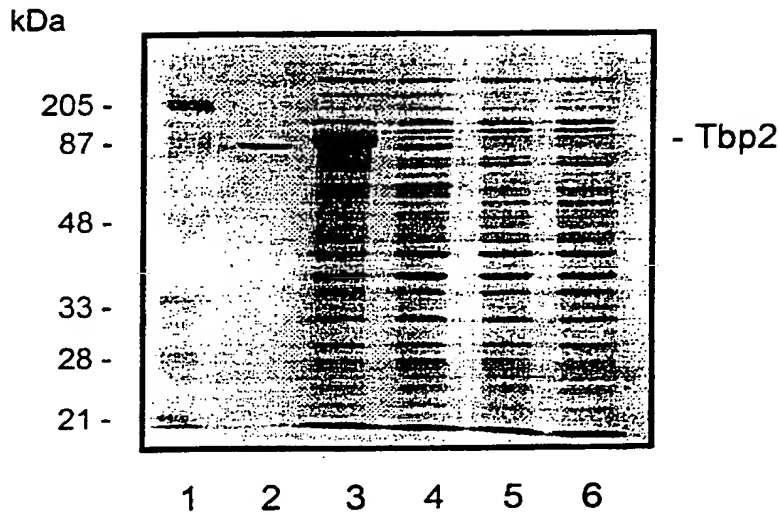


FIG.20B

Fig 21. Expression of Q8 rTbp2 protein in *E. coli*

O.G. FIG.	
CLASS	SUBCLASS
APPROVED BY	BRAFTSMAN



1. Prestained molecular weight markers
2. 4223 rTbp2 protein
3. SLRD35A lysate, 3 hr post-induction
4. SLRD35B lysate, 3 hr post-induction
5. SLRD35A lysate, non-induced
6. SLRD35B lysate, non-induced

APPROVED BY	O.G. FIG.	
	CLASS	SUBCLASS
DRAFTSMAN		

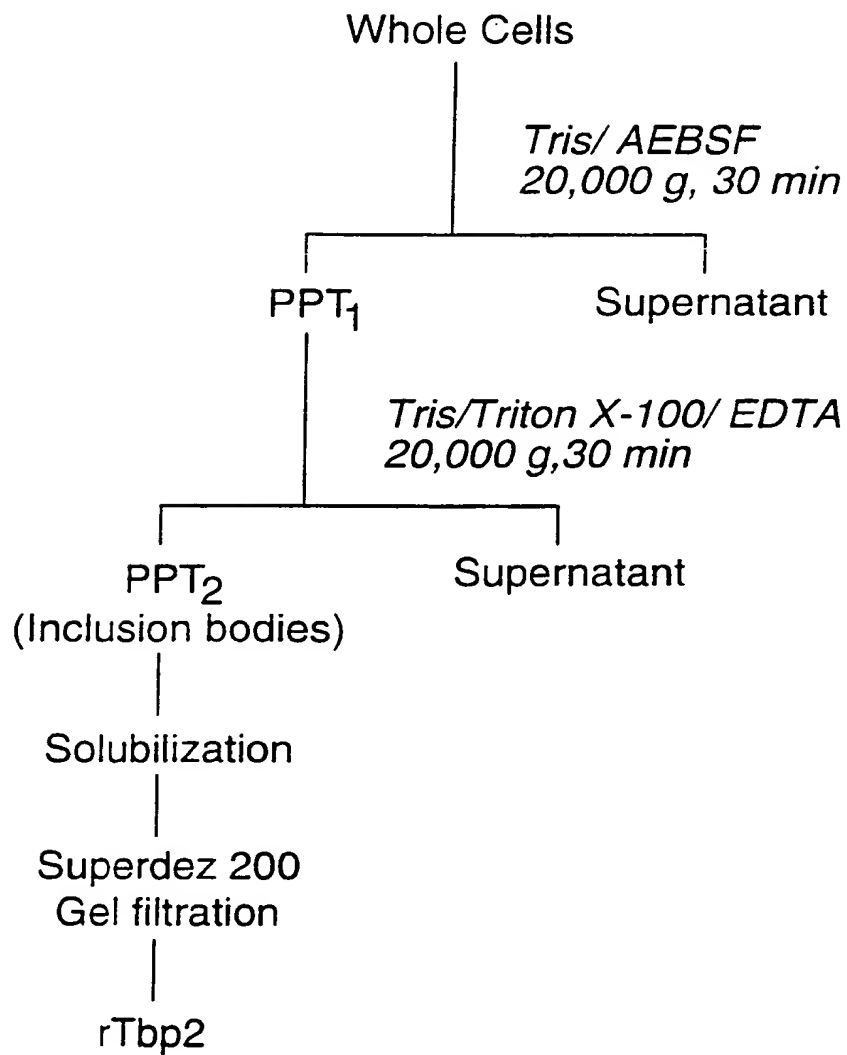
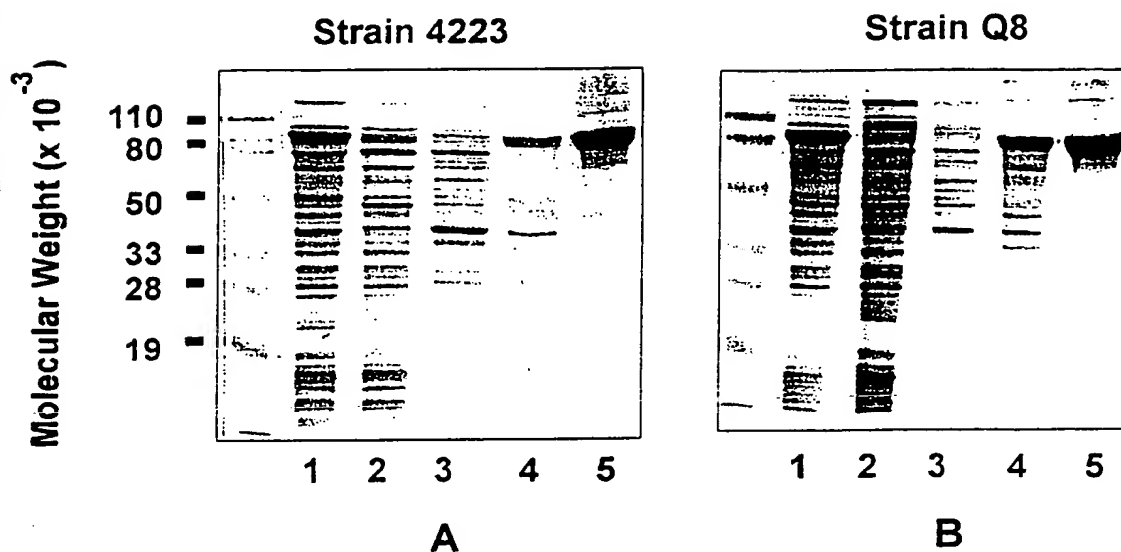
Purification of Tbp2 from *E. Coli*

FIG.22

O.G. FIG.	
CLASS	SUBCLASS
APPROVED BY	CRAFTSMAN

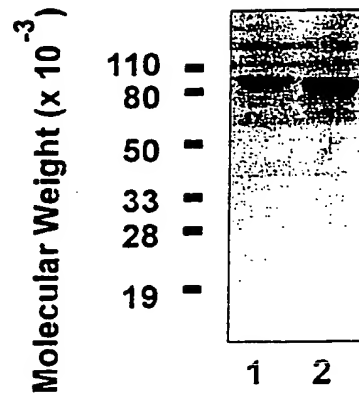
Purification of rTbp2 from *E. coli*



1. *E. coli* Whole cells
2. Soluble proteins after 50 mM Tris extraction
3. Soluble proteins after Tris/ Triton X-100/ EDTA extraction
4. Left-over pellet (rTbp2 inclusion bodies)
5. Purified rTbp2

Fig.23

Binding of Tbp2 to Human Transferrin



1. rTbp2 (strain 4223)
2. rTbp2 (strain Q8)

Fig.24

O.G. FIG.	
APPROVED	BY
CLASS SUBCLASS	
DRAFTSMAN	

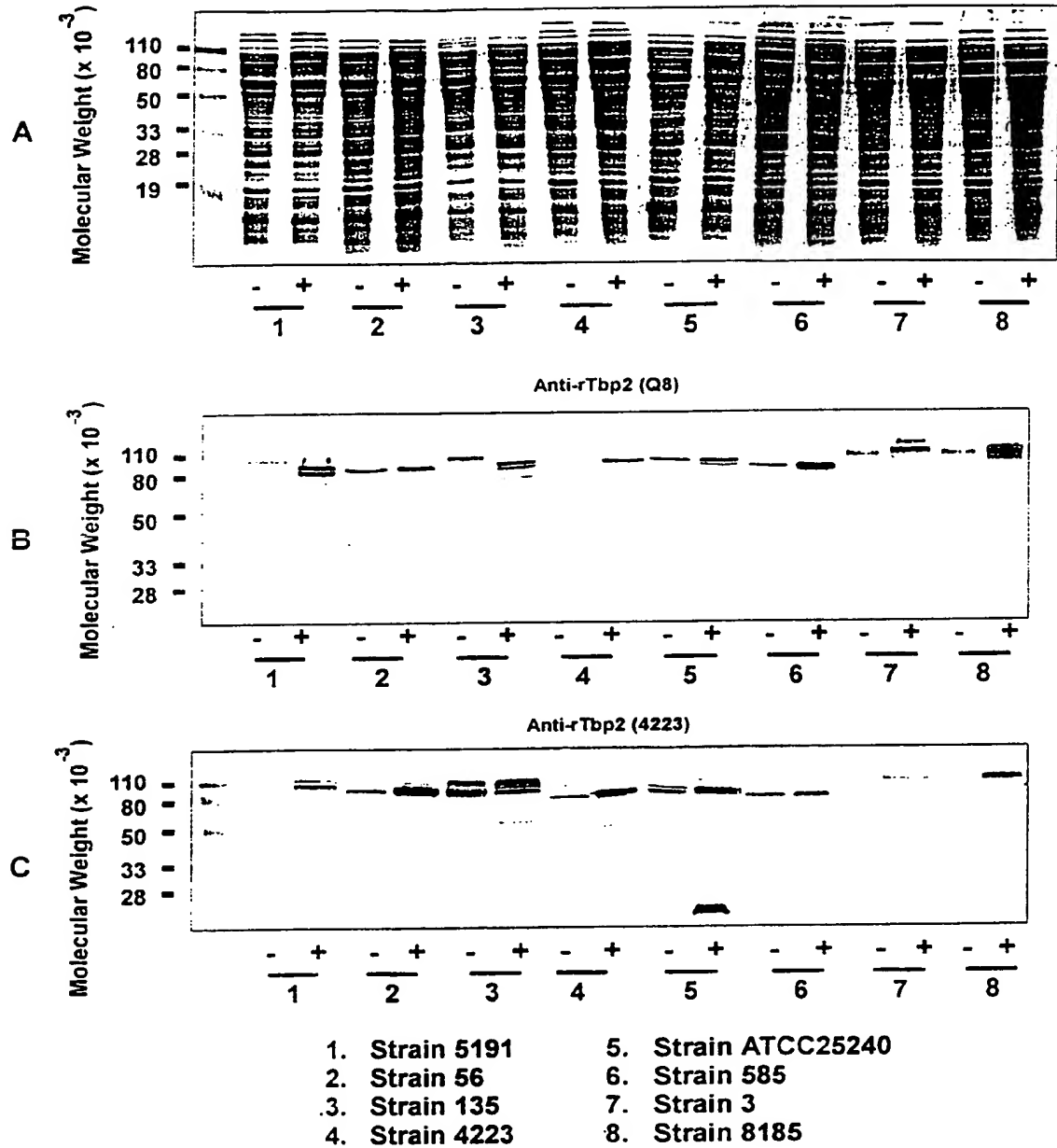
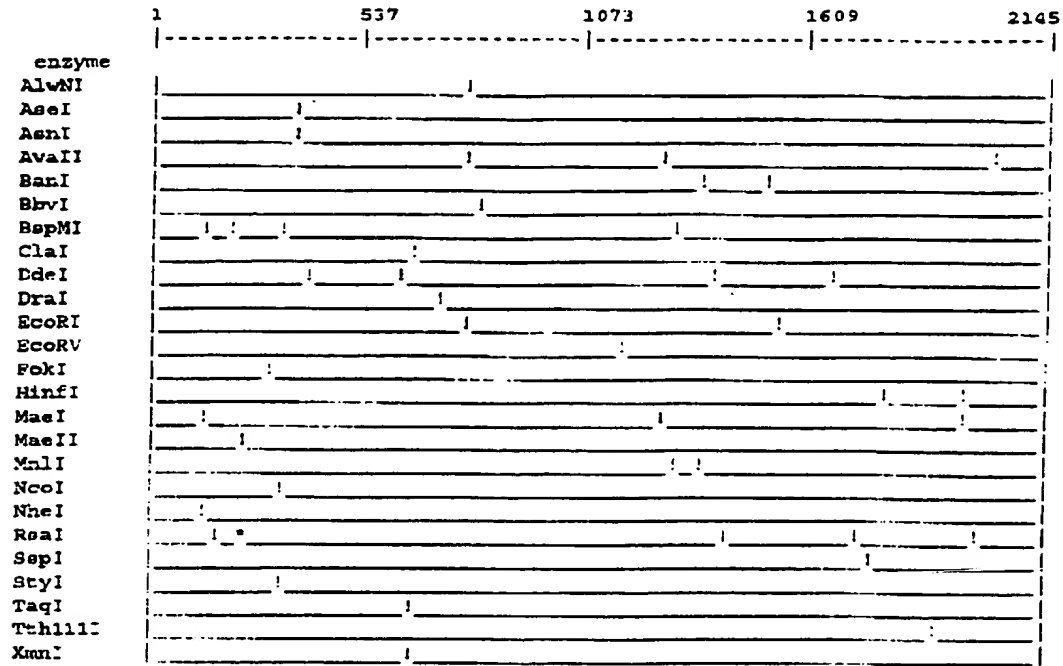


Fig.25

Figure 26 Restriction map of *M. catarrhalis* strain R1 *tbpB*

APPROVED BY	O.G. FIG.	
	CLASS	SUBCLASS
DRAFTSMAN		

15001500-36361150

Figure 27 Nucleotide and deduced amino acid sequence of *M. catarrhalis* R1 *tbpB*

AAATTTGCCGTATTTTGTCTATCATAAATGCATTTATCATCAATGCCCAAACAAATACGCCAAATGCACAT
TGTCAGCATGCCAAATAGGCATTAACAGACTTTTTTAGATAATACCATCAACCCATCAGAGGATTATTTT

27 54
ATG AAA CAC ATT CCT TTA ACC ACA CTG TGT GTG GCA ATC TCT GCC GTC TTA TTA
MET Lys His Ile Pro Leu Thr Thr Leu Cys Val Ala Ile Ser Ala Val Leu Leu

81 108
ACC GCT TGT GGT GGC AGT GGT GGT TCA AAT CCA CCT GCT CCT ACG CCC ATT CCA
Thr Ala Cys Gly Gly Ser Gly Gly Ser Asn Pro Pro Ala Pro Thr Pro Ile Pro

135 162
AAT GCT AGC GGT TCA GGT AAT ACT GGC AAC ACT GGT AAT GCT GGC GGT ACT GAT
Asn Ala Ser Gly Ser Gly Asn Thr Gly Asn Thr Gly Asn Ala Gly Gly Thr Asp

189 216
AAT ACA GCC AAT GCA GGT AAT ACA GGC GGT ACA AGC TCT GGT ACA GGC AGT GCC
Asn Thr Ala Asn Ala Gly Asn Thr Gly Gly Thr Ser Ser Gly Thr Gly Ser Ala

243 270
AGC ACG TCA GAA CCA AAA TAT CAA GAT GTG CCA ACA ACG CCC AAT AAC AAA GAA
Ser Thr Ser Glu Pro Lys Tyr Gln Asp Val Pro Thr Thr Pro Asn Asn Lys Glu

297 324
CAA GTT TCA TCC ATT CAA GAA CCT GCC ATG GGT TAT GGC ATG GCT TTG AGT AAA
Gln Val Ser Ser Ile Gln Glu Pro Ala MET Gly Tyr Gly MET Ala Leu Ser Lys

351 378
ATT AAT CTA TAC GAC CAA CAA GAC ACG CCA TTA GAT GCA AAA AAT ATC ATT ACC
Ile Asn Leu Tyr Asp Gln Gln Asp Thr Pro Leu Asp Ala Lys Asn Ile Ile Thr

405 432
TTA GAC GGT AAA AAA CAA GTT GCT GAC AAT CAA AAA TCA CCA TTG CCA TTT TCG
Leu Asp Gly Lys Lys Gln Val Ala Asp Asn Gln Lys Ser Pro Leu Pro Phe Ser

459 486
TTA GAT GTA GAA AAT AAA TTG CTT GAT GGC TAT ATA GCA AAA ATG AAT GAA GCG
Leu Asp Val Glu Asn Lys Leu Leu Asp Gly Tyr Ile Ala Lys MET Asn Glu Ala

513 540
GAT AAA AAT GCC ATT GGT GAA AGA ATT AAG AGA GAA AAT GAA CAA AAT AAA AAA
Asp Lys Asn Ala Ile Gly Glu Arg Ile Lys Arg Glu Asn Glu Gln Asn Lys Lys

567 594
ATA TCC GAT GAA GAA CTT GCC AAA AAA ATC AAA GAA AAT GTG CGT AAA AGC CCT
Ile Ser Asp Glu Glu Leu Ala Lys Lys Ile Lys Glu Asn Val Arg Lys Ser Pro

621 648
GAG TTT CAG CAA GTA TTA TCA TCG ATA AAA GCG AAA ACT TTC CAT TCA AAT GAC
Glu Phe Gln Gln Val Leu Ser Ser Ile Lys Ala Lys Thr Phe His Ser Asn Asp

O.G. FIG.	CLASS	SUBCLASS
	APPROVED BY	DRAFTSMAN

660750-22924160

APPROVED	O.G. FIG.	
	CLASS	SUBCLASS
BY	DRAFTSMAN	

675 702
 AAA ACA ACC AAA GCA ACC ACA CGA GAT TTA AAA TAT GTT GAT TAT GGT TAC TAC
 Lys Thr Thr Lys Ala Thr Thr Arg Asp Leu Lys Tyr Val Asp Tyr Gly Tyr Tyr

729 756
 TTG GTG AAT GAT GCC AAT TAT CTA ACC GTC AAA ACA GAC AAC CCA AAA CTT TGG
 Leu Val Asn Asp Ala Asn Tyr Leu Thr Val Lys Thr Asp Asn Pro Lys Leu Trp

783 810
 AAT TCA GGT CCT GTG GGC GGT GTG TTT TAT AAT GGC TCA ACG ACC GCC AAA GAG
 Asn Ser Gly Pro Val Gly Gly Val Phe Tyr Asn Gly Ser Thr Thr Ala Lys Glu

837 864
 CTG CCC ACA CAA GAT GCG GTC AAA TAT AAA GGA CAT TGG GAC TTT ATG ACC GAT
 Leu Pro Thr Gln Asp Ala Val Lys Tyr Lys Gly His Trp Asp Phe MET Thr Asp

891 918
 GTT GCC AAA AAA AGA AAC CGA TTT AGC GAA GTA AAA GAA ACC TAT CAA GCA GGC
 Val Ala Lys Lys Arg Asn Arg Phe Ser Glu Val Lys Glu Thr Tyr Gln Ala Gly

945 972
 TGG TGG TAT GGG GCA TCT TCA AAA GAT GAA TAC AAC CGC TTA TTA ACC AAA GCA
 Trp Trp Tyr Gly Ala Ser Ser Lys Asp Glu Tyr Asn Arg Leu Leu Thr Lys Ala

999 1026
 GAT GCC GCA CCT GAT AAT TAT AGC GGT GAA TAT GGT CAT AGC AGT GAA TTT ACT
 Asp Ala Ala Pro Asp Asn Tyr Ser Gly Glu Tyr Gly His Ser Ser Glu Phe Thr

1053 1080
 GTT AAT TTT AAG GAA AAA AAA TTA ACA GGT GAG CTG TTT AGT AAC CTA CAA GAC
 Val Asn Phe Lys Glu Lys Lys Leu Thr Gly Glu Leu Phe Ser Asn Leu Gln Asp

1107 1134
 AGC CAT AAA CAA AAA GTA ACC AAA ACA AAA CGC TAT GAT ATT AAG GCT GAT ATC
 Ser His Lys Gln Lys Val Thr Lys Thr Lys Arg Tyr Asp Ile Lys Ala Asp Ile

1161 1188
 CAC GGC AAC CGC TTC CGT GGC AGT GCC ACC GCA AGC GAT AAG GCA GAA GAC AGC
 His Gly Asn Arg Phe Arg Gly Ser Ala Thr Ala Ser Asp Lys Ala Glu Asp Ser

1215 1242
 AAA AGC AAA CAC CCU TTT ACC AGC GAT GCC AAA GAT AAG CTA GAA GGT GGT TTT
 Lys Ser Lys His Pro Phe Thr Ser Asp Ala Lys Asp Lys Leu Glu Gly Gly Phe

1269 1296
 TAT GGA CCA AAA GGC GAG GAG CTG GCA GGT AAA TTC TTA ACC GAT GAT AAC AAA
 Tyr Gly Pro Lys Gly Glu Glu Leu Ala Gly Lys Phe Leu Thr Asp Asp Asn Lys

1323 1350
 CTC TTT GGT GTC TTT GGT GCC AAA CAA GAG GGT AAT GTA GAA AAA ACC GAA GCC
 Leu Phe Gly Val Phe Gly Ala Lys Gln Glu Gly Asn Val Glu Lys Thr Glu Ala

600 500 400 300 200 100 0

Fig. 27 (cont)

88/90

APPROVED	O.G. FIG.	
	CLASS	SUBCLASS
BY	DRAFTSMAN	

SEQUENCE

1377	1404
ATC TTA GAT GCT TAT GCA CTT GGG ACA TTT AAT AAA CCT GGT ACG ACC AAT CCC	
Ile Leu Asp Ala Tyr Ala Leu Gly Thr Phe Asn Lys Pro Gly Thr Thr Asn Pro	
1431	1458
GCC TTT ACC GCT AAC AGC AAA AAA GAA CTG GAT AAC TTT GGC AAT GCC AAA AAG	
Ala Phe Thr Ala Asn Ser Lys Lys Glu Leu Asp Asn Phe Gly Asn Ala Lys Lys	
1485	1512
TTG GTC TTG GGT TCT ACC GTC ATT GAT TTG GTG CCT ACT GAT GCC ACC AAA GAT	
Leu Val Leu Gly Ser Thr Val Ile Asp Leu Val Pro Thr Asp Ala Thr Lys Asp	
1539	1566
GTC AAT GAA TTC AAA GAA AAG CCA AAG TCT GCC ACA AAC AAA GCG GGC GAA ACT	
Val Asn Glu Phe Lys Glu Lys Pro Lys Ser Ala Thr Asn Lys Ala Gly Glu Thr	
1593	1620
TTG ATG GTG AAT GAT GAA GTT AGC GTC AAA ACC TAT GGC AAA AAC TTT GAA TAC	
Leu MET Val Asn Asp Glu Val Ser Val Lys Thr Tyr Gly Lys Asn Phe Glu Tyr	
1647	1674
CTA AAA TTT GGT GAG CTT AGT GTC GGT GGT AGC CAT AGC GTC TTT TTA CAA GGC	
Leu Lys Phe Gly Glu Leu Ser Val Gly Gly Ser His Ser Val Phe Leu Gln Gly	
1701	1728
GAA CGC ACC GGT ACC ACA GGC GAG AAA GCC GTA CCA ACC ACA GGC AAA GCC AAA	
Glu Arg Thr Ala Thr Thr Gly Glu Lys Ala Val Pro Thr Thr Gly Lys Ala Lys	
1755	1782
TAT TTG GGG AAC TGG GTA GGA TAT ATC ACA GGA GCG GAC TCA TCA AAA GGC TCT	
Tyr Leu Gly Asn Trp Val Gly Tyr Ile Thr Gly Ala Asp Ser Ser Lys Gly Ser	
1809	1836
ACC GAT GGC AAA GGC TTT ACC GAT GCC AAA GAT ATT GCT GAT TTT GAC ATT GAC	
Thr Asp Gly Lys Gly Phe Thr Asp Ala Lys Asp Ile Ala Asp Phe Asp Ile Asp	
1863	1890
TTT GAG AAA AAA TCA GTT AAT GGC AAA CTG ACC ACC AAA GAC CGC CAA GAC CCT	
Phe Glu Lys Lys Ser Val Asn Gly Lys Leu Thr Thr Lys Asp Arg Gln Asp Pro	
1917	1944
GTC TTT AAC ATC ACA GGT GAA ATC GCA GGC AAT GGC TGG ACA GGT AAA GCC AGC	
Val Phe Asn Ile Thr Gly Glu Ile Ala Gly Asn Gly Trp Thr Gly Lys Ala Ser	
1971	1998
ACC GCC GAA GCG AAC GCA GGG GGC TAT AAG ATA GAT TCT AGC AGT ACA GGC AAA	
Thr Ala Glu Ala Asn Ala Gly Gly Tyr Lys Ile Asp Ser Ser Ser Thr Gly Lys	
2025	2052
TCC ATC GTC ATC AAA GAT GCC GTG GTT ACA GGT GGC TTT TAT GGT CCA AAT GCA	
Ser Ile Val Ile Lys Asp Ala Val Val Thr Gly Gly Phe Tyr Gly Pro Asn Ala	

89/90

Fu 27 (cont)

2079

2106

ACC GAG ATG GGT GGG TCA TTT ACA CAC AAC AGC GGT AAT GAT GGT AAA GTC TCT
 Thr Glu MET Gly Gly Ser Phe Thr His Asn Ser Gly Asn Asp Gly Lys Val Ser

2133

GTG GTC TTT GGC ACA AAA AAA CAA GAA GTT AAG AAG TGA
 Val Val Phe Gly Thr Lys Lys Gln Glu Val Lys Lys *

APPROVED BY DRAFTSMAN	O.G. FIG.	
	CLASS	SUBCLASS

060150-36341100

Alignment of *M. catarrhalis* Tbp2

[illegible][illegible]